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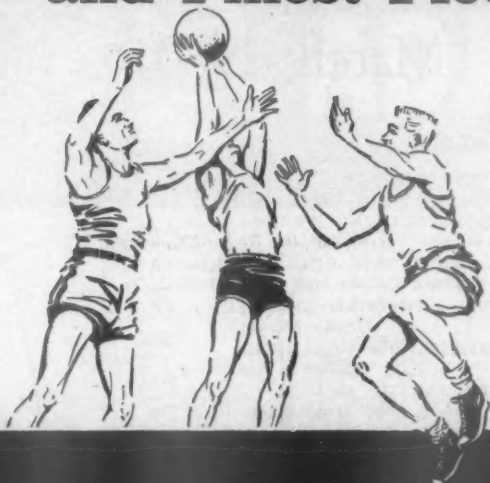
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JOHN L. GRIFFITH, Publisher

M. M. ARNS, Editor

HERB ARTELT, Jr., Art Editor



Eastern Advertising Representative
Charles Thorp, 370 Lexington Avenue,
New York City

Subscription Prices:

Two dollars per year; \$3.00 for two years;
\$3.75 for three years; Canada \$2.50 per
year; foreign \$2.75 per year. Single copies
25 cents each for current volume; 35 cents
each for back copies. Copyright 1960
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Change of Address:

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Published monthly except July and August.
Member of the Audit Bureau of Circula-
tions. Address all communications regard-
ing circulation and manuscript to:

ATHLETIC JOURNAL PUBL. CO.
1719 HOWARD STREET,
EVANSTON, ILLINOIS

Second class mail privileges authorized
at Evanston, Illinois, with additional
second class entry at Rochelle, Illinois.

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Number 7

March, 1960

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FRONT COVER ILLUSTRATION

Last month we promised you picture sequences of some of the top hurdlers. Willie May, ex-Indiana hurdler, is shown winning his heat in the 1959 Drake Relays. Pictures of Hayes Jones and Elias Gilbert will be found on pages 23, 24, and 25.

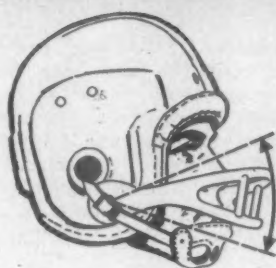
A Look At This Issue and a Glance Ahead

Pictures, pictures, and more pictures that's the story of this issue. In addition to the cover, such track and field luminaries as Hayes Jones, Elias Gilbert, Mike Lindsay, Jim Graham, and Aubrey Dooley are represented pictorially. Jim Smilgoff wanted to make it clear to a young pitcher why certain pitches work best against batters who have certain batting faults. The pictures accompanying Jim's article point up quite vividly how a batter with a batting weakness has

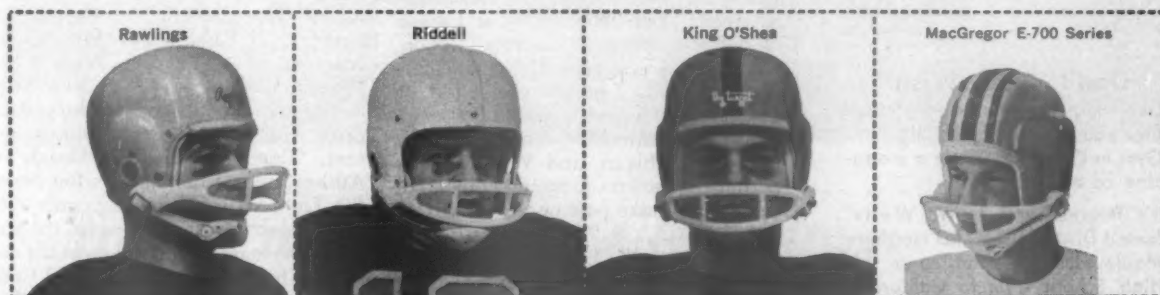
trouble with pitches thrown to that weakness. A regular reader of these pages knows that we like to make use of our pictures to compare one athlete's form with that of another. The hurdle and pole vault illustrations in this issue point up this fact. Next month, in order to analyze starting form, we are using sequence pictures of the start of the four heats in the 100-yard dash at the 1959 Drake Relays. For the tennis coach we are carrying sequence pictures of the intercollegiate semi-finalists to point out factors to be found in good tennis strokes.



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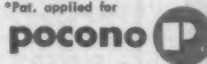
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JOHAN BENINGTON, St. Louis' winning coach, was having a tough season several years ago at Drake. Facing a particularly hard road trip that saw his team scheduled to take on two of the top teams in the Missouri Valley Conference, Benington said: "We are not picking a traveling roster this week, but are instead issuing a call for volunteers." . . . The Minnesota State High School League Bulletin predicts that in the future rule-making bodies will make the use of mouth protectors mandatory as was done with the helmet a number of years ago . . . George Hayes goes from Monessen, Penna., High School to join his old St. Bonaventure teammate, Stan Zajdel, on the latter's new staff at the University of Dayton . . . Seven states — Arizona, Illinois, Minnesota, Mississippi, Montana, Nevada, and New Mexico prohibit high school athletes (with remaining eligibility) from attending coaching clinics. Kansas, Michigan, and West Virginia permit the athletes to attend clinics, but they cannot take part or receive coaching . . . Charles "Chot" Morrison of Hackettstown, N. J., has one of the top coaching records in the country. All of his 31 years of coaching have been spent at the New Jersey school and his record shows 208 victories and 12 ties against only 48 losses. In only three seasons have his teams lost more games than they have won. Ten times Morrison's teams were undefeated. They have

been awarded 13 state titles, five in the past six years. His teams have had two winning streaks of 27 and 33. "Chot" Morrison's record would negate the argument of many that the T is the best formation for limited personnel. Hackettstown has a male enrollment of 175 in the upper three grades and Morrison is a dyed-in-the-wool single wing-er.

* * *

MINNESOTA, long one of the leading states in regard to the number of schools playing six-man football, did not field a single team in that activity last fall. On the other hand, 125 Minnesota schools played 913 eight-man games. This could be the high for the nation . . . Paul Alley leaves his line coaching job at Victoria, Texas to join Warren Woodson's staff at New Mexico State . . . John Cooper, who collaborated with Jesse Mortensen on the new text, "Track and Field for Coach and Athlete," holds the Big Six-Big Seven-Big Eight record as having contributed the greatest percentage toward the scoring of the teams he played on in the conference basketball races. In 1932 Cooper accounted for .447 per cent of Missouri's total basketball scoring. Only Ray Ebling of Kansas (1934), Clyde Lovellette of Kansas (1951), Homer Wesche of Kansas State (1939), and Frank Graves of Kansas State (1937) have

(Concluded on page 44)



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Question:

Should college meets, and particularly the NCAA Meet, be revised to include all of the Olympic track and field events?



GEORGE T. EASTMENT, Manhattan College

This country can no longer afford to allow five or six Olympic titles to go by default. If we are to meet the challenge of the world in track and field, our athletes must be developed on the college level. The change in the NCAA program is a most progressive step, and it is hoped that shortly all conference and eventually dual meets will follow suit. Here in the East the ICAAAA and the Metropolitan Intercollegiate Association immediately changed to conform with the NCAA set-up. The large and small countries in the world are making remarkable progress in our sport, and if we stand still the world will pass us by. There is no reason why our athletes cannot excel in the hop, step, and jump; the steeplechase, etc., if they are given the incentive on the local and the national level.



BRUTUS HAMILTON, University of California

No, except for the NCAA Meet in Olympic years, which serves as an Olympic semi-final qualifying meet. The off events can be included in invitational meets, relay carnivals, all-comers meets, and in the AAU meets. Thus our athletes will have ample opportunity to compete and try for the difficult Olympic standards in those events. I am against undue emphasis in the form of a crash program to try to build up events and sports which are exotic to our way of life merely to make a better showing in international competition. Our boys will do all right at Rome and will make their best showing in the so-called off events despite the stern competition. However, they will have trouble in the traditional events. The rest of the world is catching up. As a track coach, I am glad to see the sport improving throughout the world.



OLIVER JACKSON, Abilene Christian College

As a coach, I am interested in providing an opportunity for any young man who desires to compete in track and field athletics. If we are to provide this opportunity, we must offer as many different events as possible, especially those which are a part of the Olympic program. If coaches and meet directors would include some of the long distance races in our big meets, competition would eventually become keen in those events, and the spectators as well as the competitors would enjoy them. I feel that especially in an Olympic year our major meets, as well as the NCAA Meet, should include the events, except the walk and marathon, which are a part of the Olympic program. By so doing, our boys would be given an opportunity to compete in those events and develop to a point where we could be contenders in the total Olympic track and field program.



JAMES KELLY, University of Minnesota

In Olympic years, the Olympic program of track and field is included in the NCAA Meet. I do not believe these events should be added in a non-Olympic year because they would be harmful to our dual and conference meet program. They would be an added financial burden on our track program and the directors might object. Inclusion of these events would make our National Collegiate Championships more of a haven for over-age foreign athletes. If we maintain the fine program we have in our high schools and colleges, the United States will still dominate the Olympic track events. This program brought us 12, 14, and 15 gold medals in the last three sets of games. Only nine men have represented the United States in an Olympic event during the past three Olympics. To change our intercollegiate program would be out of proportion to the value received.

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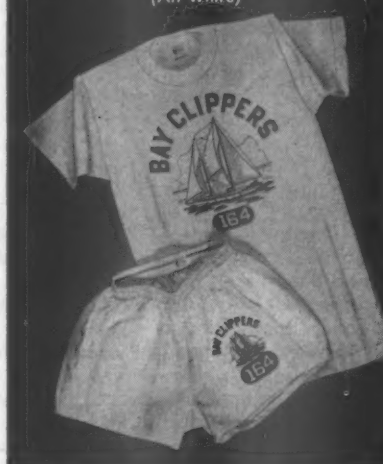
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Shot Put Techniques

By **BILL CARROLL**
Track Coach, University of Oklahoma

ATHLETES have been throwing objects competitively for centuries. The shot in particular has been thrown or pushed since the middle 1800's. Since that time there has been a gradual but steady advancement in stance, technique, and a great many other points.

The most significant change in recent years has been the stance. Whereas fifteen years ago the shot putter stood at a 90 degree angle to the front of the circle, today he stands in the back of the ring with his back in the direction he will throw. This change in stance has brought about more power, lift, and leverage which in turn has given the shot putter a decided improvement in delivery and distance.

Another important point has been the installation of the weight-lifting program for weight men. The object is not to equip the athlete to lift weights, but is for the purpose of building up the structure he possesses.

At the University of Oklahoma, we use a very rigid and consistent weight-lifting program in the fall of the year. The use of weights is continued throughout the entire year on a modified basis. It might be well to mention that we have a year-round weight-lift-

ing program for our athletes in all events, not just for weight throwers.

Our two shot putters of last year, Dan Erwin, who put 58 feet, 1½ inches and Mike Lindsay, who had a 58 foot, 4 inch toss, work four days a week on weights for the first eight or ten weeks of the season. Then they begin to taper off, lifting two days weekly.

The weight-lifting program used by Erwin and Lindsay is as follows:

Pre-Season

Monday — Bench press — 300 pounds; squat — 400 pounds; clean — 240 pounds; and behind-the-neck press — 190 pounds.

Bill Carroll served for three years in the navy between the time he was state high school pole vault champion and the beginning of his college career at Oklahoma. He tied for second place in the 1949 NCAA meet and vaulted 14-5 at the 1950 Kansas Relays. Carroll coached at Wentworth Military Academy and Southwestern College before serving as assistant for three years under John Jacobs. When the latter retired three years ago, Bill became head coach.

Tuesday — Press — 200 pounds; sit-ups — 30 pounds; curls — 150 pounds; and dead lift — 400 pounds.

Thursday — Repeat the exercises done on Monday.

Friday — Repeat the exercises done on Tuesday.

After competition starts, the bench press, squat, clean, and dead lift should be done on Monday and Wednesday. The same repetitions and weights should be used.

We will not compare the style and technique of our shot putters with other great athletes noted for pushing the steel ball. Rather, we would like to describe the accompanying pictures which were taken at the Drake Relays last spring. Perhaps the description will help solve some problems a coach may have with his particular athlete.

Mike Lindsay is the shot putter in action, and this sequence was taken right after he put 57 feet, 7¼ inches for a new Drake Relays record.

Illustration 1 shows that the angle of Lindsay's trunk is good. However, he is not low enough because he failed to bend his right leg properly. His left arm is wrong. It should be bent more and carried across his chest. Because of this



MIKE LINDSAY

error in stance, Lindsay's left leg swing is taking place in a plane not directly across the circle, and because it is not in a direct plane, the athlete will have a tendency to be tight across the hips. A shot putter should start in a low stance so he can come across with a continual lifting motion.

As shown in Illustration 2, Lindsay's left arm is still wrong. However, his left leg swing is good despite his left arm error. Mike's left arm should be up higher in order to give him better drive and balance. He has straightened his leg swing to a more direct plane.

Illustration 3 shows his left arm in better position. It seems that a slight cocking of Lindsay's shoulders out of the direction of the line of throw has taken place. He is finally bringing his left arm into the position it should have been in in Illustration 1. Because his arm is low and he is bringing it up, Lindsay must make an antagonistic movement, contrary to forward motion.

Mike is now in putting position (Illustration 4). The result of his faulty leg swing and incorrect plane is now apparent. His left foot has come to the ground approximately 12 inches out of correct line. Lindsay's right leg has good position for the lift, but his left foot is just a little too far in the bucket for the best results. Notice the position of his head and eyes as they are preparing to follow the shot from the hand hold to delivery.

Illustration 5 shows the lift with the rear leg has started and there is a slight opening of Lindsay's shoulders. However, the lift is being carried out

in a vertical direction in the line of throw. Because of poor position of his left leg, Mike is blocking his hips slightly. Thus he will not get his entire body weight behind the push.

Due to incorrect position of his left foot (Illustration 6), Mike is finding it difficult to lift his leg completely. His left leg drive is complete, but the throw is taking place approximately 20 degrees out of line. Thus the shot will be released from an inside straight line which necessitates a premature reverse. In turn the tendency to release the shot too far away from the head and neck will be present.

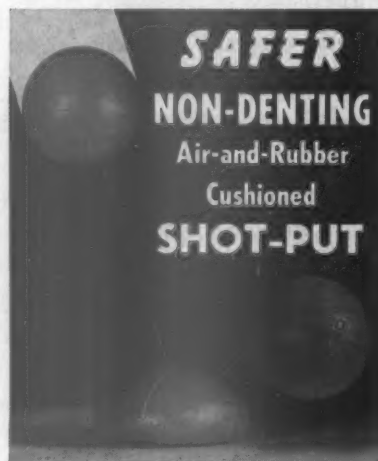
In Illustration 7 we see that the attempt to get the throw in line causes a drop of Lindsay's left shoulder, and although he makes an effort to follow the shot correctly, he is hindered by his left leg. Notice that his hips are still slightly locked, causing the hip shift to be delayed.

Good finger flick which gives the utmost power and snap is shown in Illustration 8. Notice the excellent release of the shot. Lindsay's balance is good. His head and eyes, as they should be, are up watching the delivery.

Illustration 9 shows the reverse being executed. Lindsay's follow-through is good. Notice his feet are not on the ground as the shot is released. The reason his feet are off the ground is the tremendous body follow-through. His head and eyes are up watching the flight of the shot.

The reverse, follow-through, and de-

livery are now complete (Illustration 10). Good balance is maintained. Lindsay's head and eyes are still on the shot.



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Individual Base-Running Strategy

By JACK STALLINGS

Baseball Coach, Wake Forest College, Winston-Salem, North Carolina

THE success of a good, aggressive base-running baseball game depends on the skill and strategy of the individual base-runner, not on the skill and strategy of the coach in the dugout or the base coaches on the field. To the head coach, of course, falls the responsibility of formulating the strategy for the entire team and for the game itself. The base coaches play an important role by reminding the base-runner of the situation of the game and the type of strategy that is necessary, and by helping him when he cannot see the play develop. However, far too many players rely almost completely on the coaches, and become *puppets on a string*, doing only what they are told, with little or no thought as to how they should be running the bases. A good base-runner must have a sound knowledge of the proper base-running strategy, and must constantly remind himself of the game situation and the type of strategy needed under the circumstances. Knowing and using base-running strategy properly makes a player a good base-runner and not just a *puppet* being pulled around the bases by base hits and base coaches.

1. *Know the opponent.* Before the game, especially during infield practice, the players should observe the defensive skills and abilities of the opposing players, paying particular attention to the strength of the throwing arms of the outfielders, how well they charge the ball, and how fast they get rid of it. The players should also watch the second baseman and shortstop make a double play, and note the type of pivot most commonly used by each, in order to have a better idea where to slide in trying to break up the double play. In addition, the players should watch the throwing of the opponent's catcher closely, noticing how strong and accurate his arm is, and how quickly he gets rid of the ball.

2. *Know the situation.* A base-runner must be constantly aware of the situation of the game, be sure he understands the situation completely, including the number of outs, the score, the inning, etc. Each base-runner should check with his base coach on the situation, and both must make sure it is understood thoroughly. There must not be any uncertainty. If either one is not sure, time should be called and a check made with the umpire.

3. *Figure out the situation.* When the situation of the game has been reviewed, the base-runner must figure out the type of strategy that is called for under the circumstances. This must be done before the play starts, so there will be no hesitancy or uncertainty when the ball is hit. The runner must decide, and impress upon himself, whether the situation calls for him to be very aggressive, aggressive or conservative.

A. *If the score is close* — (one or two runs ahead or behind).

1. With no one out, the runner should play conservatively.

2. With one out, he should be more aggressive. However, the runner should keep in mind the strength of the next batter. He will want to be more conservative if the next batter is particularly strong. Also, with one out, the runner should make every effort to reach third base, and thus be able to score on a fly ball or an infield out.

3. With two out, the runner should

be very aggressive, and make every effort to score if there is any chance he will be successful. In addition, he should make every effort to reach second base and be in a position to score on a base hit. However, the base-runner should not take great chances trying to reach third base when there are two outs. While it is not true that a runner is *just as well off on second as he is on third*, the added advantage of being on third is not worth taking the risk of being thrown out.

B. *Ahead two or three runs.* When the offensive team is leading, the base-running should follow the same general pattern that is used when the score is close, but on the whole the strategy can be more aggressive. This is especially true when the offensive team has a good pitcher on the mound and the opponents are not expected to score many runs. Under these circumstances, the offensive team does not have to play for a big inning, and can be very aggressive in its base-running, placing pressure on the defense and being alert to take advantage of any mistakes on the part of the defense.

C. *Ahead eight or nine runs.* When a team is ahead by a big score, the base-runners need not play extremely aggressively, but they should take advantage of every scoring opportunity. Players should not risk injury by very aggressive base-running when their team has a large lead, especially in the latter stages of the game or when the opponents are not scoring many runs. Late in the game, with an 8-0 lead, the offensive team can afford to be slightly conservative; however, with the score 15-7, the offensive team should continue to run the bases aggressively and pick up more runs, because the opposing team has shown the ability to score rather freely.

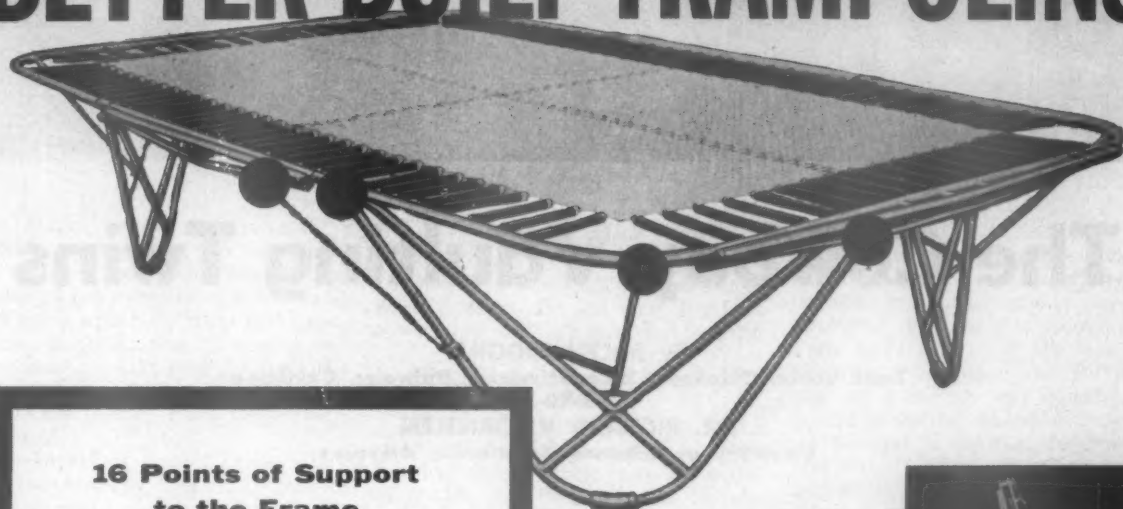
D. *Behind two or three runs.* When a team is two or three runs behind early in the game, the base-running strategy should, as a general rule, be more conservative. However, the abilities of the pitchers will have some effect on the strategy used. If both pitchers are good, and the game promises to be a low-scoring one, the base-runner can be more aggressive in an effort to pick up one run at a time. If the pitchers are not exceptionally strong and the game might be a high-scoring affair, a more conservative base-running strategy would be in order to try to set up a big inning.

E. *Behind by several runs.* When a team is several runs behind, especially in the middle or late innings, the base-running strategy must be very conservative, with the players taking no unnecessary chances. In this situation, a big inning is necessary to get back into the

(Continued on page 46)

Jack Stallings played at Wake Forest and then saw his career in professional baseball cut short by an attack of polio. He served as an assistant coach at his alma mater in 1955, the year Wake Forest won the NCAA championship. Stallings served as an assistant at North Carolina while doing graduate work and then coached for two years at Hanes High School in Winston-Salem. He returned to Wake Forest in 1958 as assistant coach and took over as head coach at the beginning of this year.

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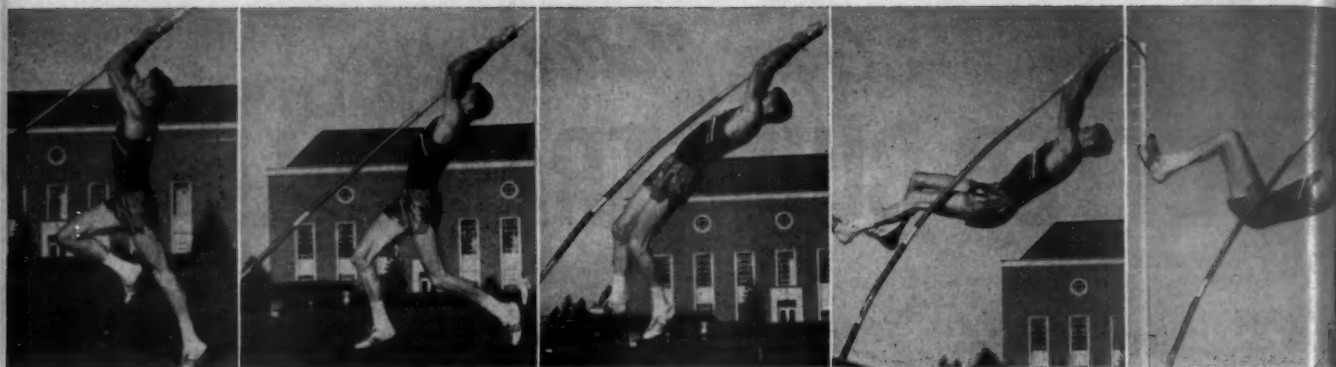
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The Cowboy Vaulting Twins

By RALPH HIGGINS

Track Coach, Oklahoma State University, Stillwater, Oklahoma
AND

DR. RICHARD V. GANSLER

University of Arkansas, Fayetteville, Arkansas

I am convinced, that it is scarcely possible, to acquire by any other mode of exercise, what may be accomplished by vaulting; and that strength and pliability of body, courage and presence of mind, preservation of equilibrium and accuracy of eye are promoted by it in an extraordinary degree: whence I cannot but wish, that this exercise may by no means be omitted in a plan of physical education, so wrote Guths Muths of Germany in the year of 1802.

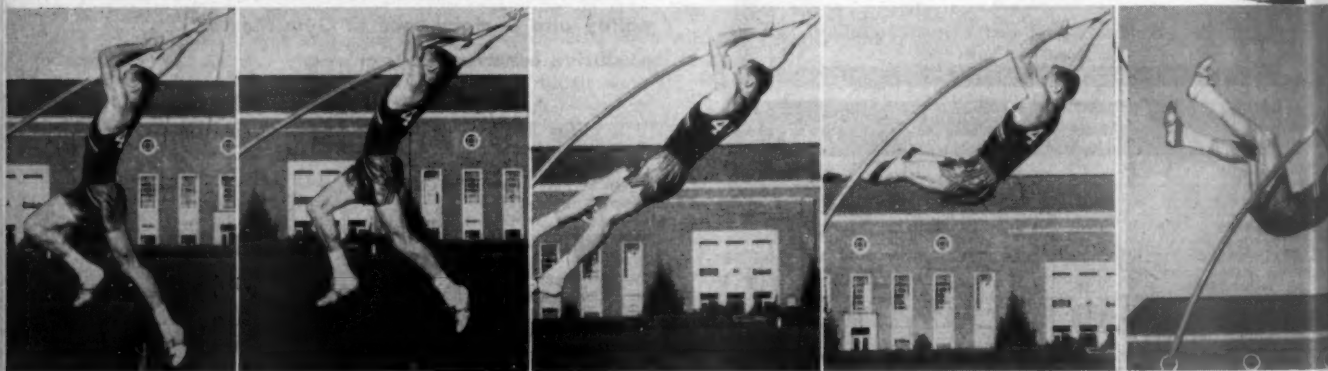
A sensational series of performances capped by the successful plus 15 foot vaulting of three men on the same day in the same meet heralded the greatest siege of collegiate pole vaulting in the history of track and field athletics, and focused the attention of track followers, for the first time, on the geographical center of the United States. A few men, among them Bill Carroll, coach at Oklahoma, and his sophomore protege, J. D. Martin, Aubrey Dooley, and Jim Gra-

ham were aware of the impending struggle for national pole vaulting supremacy. Early-season practice performances of these men promised great things. J. D. Martin, a 19-year-old sophomore giant who looks more like a basketball player, and the frequently injured Jim Graham were unknown quantities in the pole vault equation.

A quick historical sketch of the two cowboy vaulters who are the subject of this article may be of interest.

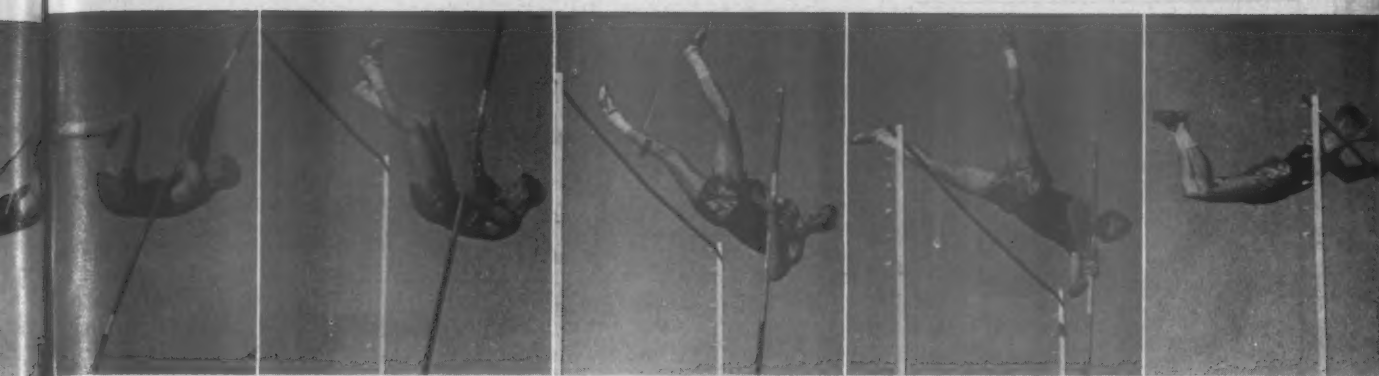
Jim Graham, veteran Oklahoma State vaulter, was an unspectacular 12 foot, 2 inch high school pole vaulter at Tulsa Rogers High School in 1953. A growing boy, then only 6 feet, 2 inches and weighing 175 pounds, he has since sprouted into a 6 foot, 4½ inch 187 pound pole vaulting giant. As an 18-year-old freshman in 1954, Jim only vaulted 13 feet, 2 inches, a height he repeated as a sophomore. His failure to progress during his sophomore year

stemmed from a calcium deposit in his ankle which was removed surgically during the summer of 1955. The recurrence of this injury in 1956 prevented him from competing in the Olympic Games, for which he qualified with a 14 foot, 8½ inch vault and by winning the NCAA title. His ankle was again operated on in the spring of 1957. (Jim did not attend school during the 1956-57 school year). Returning to the School of Veterinary Medicine in the fall of 1957, Jim seemed headed for an outstanding 1958 indoor season. After having vaulted 14 feet, 6 inches outdoors in February in practice, he subsequently fractured his left hand while warming up for his first indoor meet, and in April of that year his hand had to be operated on to correct that damage. Jim still has some difficulty doing handstands because of this injury. After a cautious training program in the fall of 1958, Jim looked forward to a good



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1959 indoor season, but suffered a pulled stomach muscle and was forced into inactivity until the Texas Relays. He subsequently vaulted over 15 feet in eight meets with a top mark of 15 feet, 5 inches. Enroute to his victories he had 15 successful vaults over 15 feet. His triple victories at the Texas, Kansas, and Drake Relays have never been duplicated.

By comparison, Aubrey Dooley's record is unmarred by injuries. To date he has been ahead of Jim Graham in his vaulting progress by a substantial margin. While attending Braman, Oklahoma, High School, Aubrey was a rugged 5 foot, 11 inch 185 pounder. As a 17-year-old junior, he vaulted 13 feet, 2½ inches, but fell off to 13 feet in his senior year. Now at twenty-two he stands 5 feet, 11½ inches and weighs only 167 pounds, which has no doubt contributed to his progress. As a freshman, Aubrey vaulted 13 feet, 8 inches prior to switching over to the fiberglass pole. As a sophomore, he vaulted a spectacular 14 feet, 9 inches and consistently exceeded 14 feet. In his junior year, he improved another 8 inches when he cleared 15 feet, 5 inches. Actually, Aubrey cleared 15 feet, 2 inches in a triangular meet against Arkansas and North Texas. Dooley vaulted over 15 feet in five meets last year and had eight 15-foot vaults.

JIM GRAHAM

These men have been consistent at or near 15 feet in rain and wind. It rained throughout the Big Eight Meet in 1959.

Some Background Notes

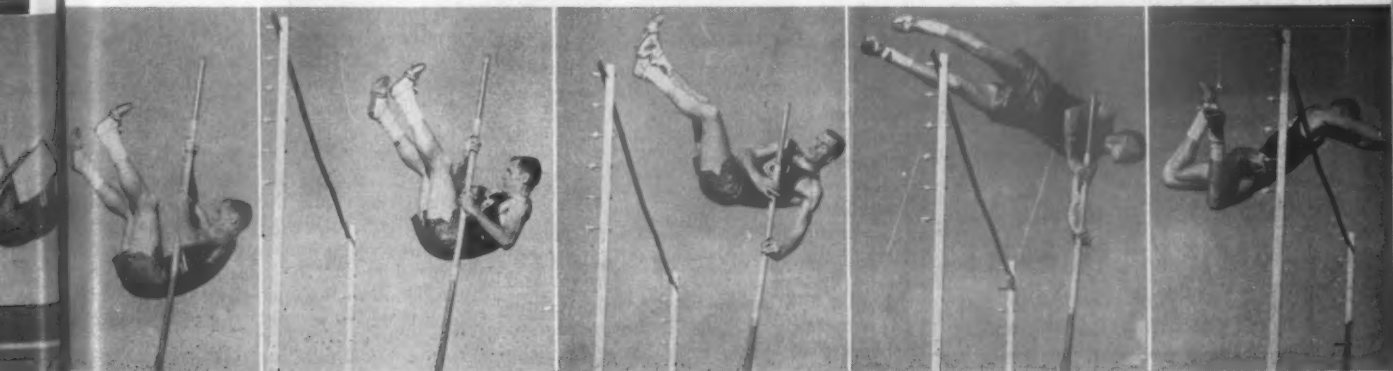
Before attempting to portray the style of these vaulters, it may be of interest to describe their runs and hand-grips. Jim has been using a "Vault-master" metal pole and holding 13 feet, 8 inches to the top of his right hand from the end of the pole. Aubrey has now been using a fiberglass "Sky Pole" for two years. His top, or most effective grip, has been 13 feet, 6 inches. He has held higher on the pole, but cannot control this grip as well. Aubrey Dooley runs 115 feet with a check mark at 72 feet, while Graham runs 117 feet with a check mark at 74 feet. Jim has run 15 seconds flat repeatedly in the high hurdles in college whereas Dooley does not compete in any other events. Although their fall and winter training involves general body building and some moderate weight lifting, this is minimized during the competitive season. Both of these men have cleared 15 feet in practice several times. At Oklahoma State we

have a ground rule that every track athlete must jog four quarter miles before he can work at his specialty. The decrease in injuries among our track men as a result of this procedure has been spectacular. Of the two men Graham is the more powerful runner and can accelerate very quickly, while pound for pound, Aubrey is muscled the stronger of the two. In their general style, Graham is a conventional long-swing easy-style of vaulter, while Dooley's style employs the pole spring more effectively. Both of these men possess one quality in common, an ascetic determination to give their best performance regardless of the conditions or the competition.

Some Notes on Jim Graham's Style

Jim's form can be characterized by one word *simplicity*. No attempt has ever been made to change his long natural swing. Most of Graham's early difficulties came from too long a swing and an inability to gather himself around the pole well. This fault was aggravated by his great speed and long legs. Jim's run, for a big man, is rather short, but his long experience with the hurdles helps him get up speed quickly. His drive into the box is very power-

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ful and permits his high grip. He seldom misses his stride or balks on a jump.

Jim's pole plant is almost perfect. It is very difficult to obtain a picture of him when he does not get his hands together at the take-off. As a result, he gets the maximum effectiveness from any hand-grip he uses. The illustrations show Graham's plant and powerful take-off drive. For a fraction of a second after he drives in he hangs onto his pole, which, with a high grip, is necessary to get the pole swinging. Jim starts his roll back on the pole earlier than most vaulters. He can do this more successfully than a shorter man because of the tremendous centrifugal force he gets from the swing and take-off. A shorter vaulter, who rocks back too early, may stall out in the air. It will be noticed that as Jim rocks back he keeps the pole out near his hip and does not attempt to pull it back under his armpit. This is a common fault in the case of beginners who swing too long and rock back too late or not enough.

At the finish of the swing-up action, Jim drives his right leg as high as possible above the bar, not toward it, but rather in front of the bar. As soon as his leg action is well started he no longer watches it, but starts into his fast turn. Notice that at the finish of the turn his weight is well back over the pole for a very efficient driving push-off.

In this vault at 14 feet, the tremendous drive obtained from the right leg action and the long hard swing will be noticed. Normally, Jim does not make any attempt to arch over the bar, but clears it straight out with a fly-away action. Occasionally he may drop both legs 10 to 15°, which he immediately counteracts with a fly-away or reverse arch. Graham usually lands facing the right side of the vaulting pit, evidence of a good fast turn. Almost all of Jim's early troubles came from too long a swing where he would drift into the bar, often knocking it off while still rising. This is a common fault with long-swing vaulters.

The Dooley Form

When a young coach or vaulter sees Aubrey Dooley vault for the first time, he may be astonished by the fierce manner in which he approaches the box. Aubrey literally stampedes his way in because he lacks the natural speed of Graham and drives in very hard. The next observation a spectator makes is the ferocious bending of the pole during the swing-up. Older coaches will readily recall the pole vaulting of Nishida and Ohe in the 1932 Olympic Games and Ozolin of Russia who used this technique to vault 14 feet, 4 inches more than twenty-five years ago. In reality, the

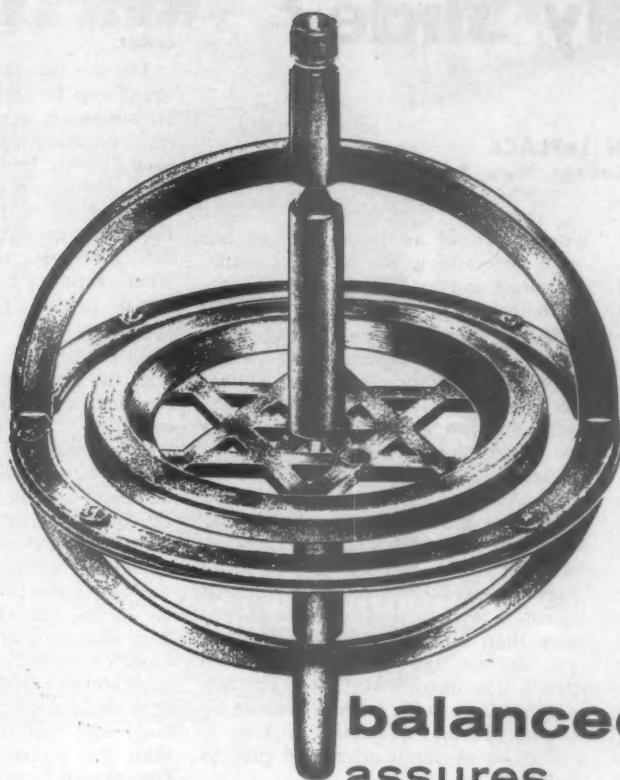
vaulting form of Dooley is rather old-fashioned. On many of Dooley's jumps, the pole bends at least 3 feet out of line, a real compliment to the pole and the vaulter with the courage to hang onto it. Dooley is using a vaulting style that modern vaulters have drifted away from, primarily because they did not have the proper equipment to employ this style. With the slightly built Japanese and the very short Russian pole vault pioneer, Ozolin, these earlier bamboo poles worked very effectively.

A great deal of Aubrey's success in the pole vault can be attributed to his fierce determination to clear the bar no matter what. We think he is the greatest third-try pole vaulter in the world today. When in top condition, he is just as dangerous on his third jump as he is on the first try. His 15 foot, 5 inch vault was a clutch performance.

Aubrey does not try to get his hands together at the take-off. He deliberately bends his pole in the swing. The separation of his hands after the shift, about 12 inches, is necessary to get the maximum pole deflection. Aubrey really gets *mad at the box* when he comes in for the pole plant. Usually, when he fails to make the jump, it can be traced back to a laxity at the take-off. At the take-off, Dooley drives in very hard and straight ahead. This straight-ahead drive with his hands separated bends the pole.

His swing-up is accomplished by elevating his legs, which are only slightly flexed at the knees, with a hip flexion action. Aubrey has tremendous hip flexibility and excellent lower back flexibility. In the continuation of the swing-up, Aubrey's action reminds one of an elevator rising, or a stiff-legged rope climber. He rises straight up along his pole. His pull-up and straightening of the pole are closely coordinated actions and his rise to his peak height is abrupt. On many jumps it seems as if he will never get up to the bar because his pull is delayed until he feels the pole helping him go up. Only his great muscular power permits this last-minute pull-up. Despite these rather awkward actions, it will be noticed that Aubrey stays very close to the pole and behind it throughout his upward flight. He literally *sits in the air*. His turning action is completed at the last possible instant and is not associated with the gradual turning we see in Graham's form. At the critical moment Aubrey flips himself over, not turning in the conventional manner. This flipping action coupled with the pole spring and tremendous lifting action throws him high above the bar, but still very close to his pole. At the completion of the turn, Dooley's body weight is distributed much closer to the pole than is the case

(Continued on page 67)



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Can Kelly Slide?

By JOHN LaPLACE

Baseball Coach, The City College, New York, New York

THERE is no more exciting moment in a baseball game than the simultaneous approach to a base of the ball and a runner. As the baseman reaches for the ball, the runner drops into a slide, and then all eyes turn to the umpire for the decision. In this brief instant the speed, daring, and the skill that are necessary in baseball come into being. The speed and daring of the baseman and runner are principally inherent factors, but the skill of the tag and the slide are the result of many hours of practice under the supervision of capable coaches.

There are many types of slides: the straight leg slide which enables the runner to reach the base quickly; the fall-away slide carrying the runner far from the baseman and consequently providing the smallest target for a tag; the hook slide which carries the runner away from the baseman and also enables him to get to his feet quickly and to continue running should an opportunity present itself; the headfirst slide which some runners employ despite its dangers; and the many impromptu slides which players develop on the spur of the moment. The last type of slide is sometimes the result of an at-

tempt to avoid an inevitable tag, but more generally is the result of faulty technique and for this reason can easily result in injury.

Sliding is a skill that is sometimes overlooked in the training schedule, and this oversight is understandable. Sliding pits are not always available and without them players are reluctant to practice a skill that is certain to result in bruised hips and perhaps sprains or strains. Of course, the team that has a sliding pit has no problems. But the team that does not have a sliding pit need not forego the opportunity to be taught this skill. Any smooth floor will suffice. A stage or a gymnasium floor is more than adequate. As a matter of fact, in the case of most northern schools it is imperative that skills such as sliding be taught indoors because by the time favorable weather arrives, it is time for regularly scheduled play to begin.

Not all of the slides can be taught on a hardwood floor. However, the hook slide lends itself readily to this type of instruction. Players need only wear sweat pants or any other type of long pants for protection. At first it is better if the players take off their sneakers

so that nothing will hamper their sliding action. Later they must be able to slide along a floor with sneakers. If they cannot, they are in incorrect position and the same error will interfere with their slide out-of-doors while wearing spikes.

For the instructional drill the entire squad can be taught together which is an advantage over a sliding pit where only one player can work at a time. The squad should be lined up in a series of files. Then each player drops his glove on the floor to represent a base. Tell the player to step back one step from the base. It makes no difference whether the first slide taught is to the left or to the right because eventually the players will use both.

In teaching the squad to slide to the left, the first movement should be a step forward with the right foot, placing this foot so that the toe is in contact with the glove that is being used as a base. Next the player should place his left hand on the floor parallel with his right foot but well out to the left of his body. The next movement is to bend up his left leg and place the lower part of this leg on the floor almost perpendicular to the line of travel but with the knee slightly more advanced than the foot. We mean that the leg between the knee and the ankle will rest on the floor at a slight angle across the line of the body and just a trifle more forward than the player's left hand. His left foot should be turned upward so that the sole of the foot points to the right and to the rear of his body. Then the right leg should be dropped to a similar position resting across the left leg, with the knee of the right leg just about at the mid-point of the lower left leg.

(Continued on page 52)

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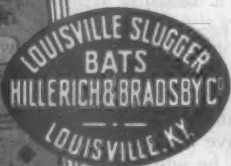
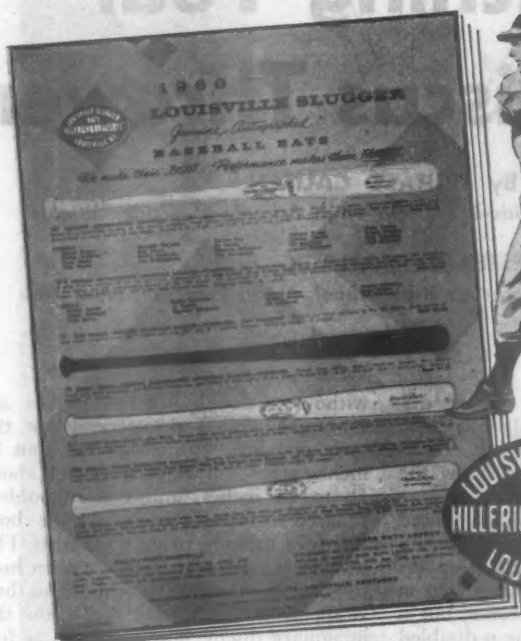


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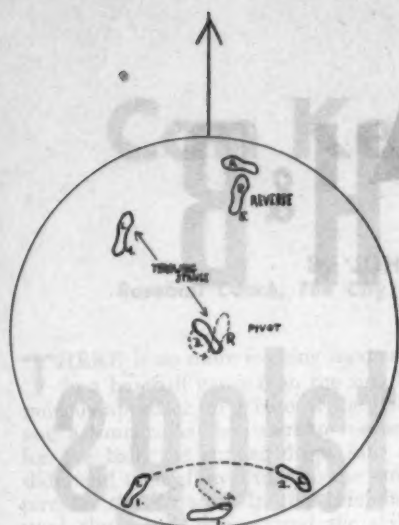
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Teaching Your New Discus Thrower

By RICHARD CALISCH

Track Coach, Riverside-Brookfield High School, Riverside, Illinois
and

LESTER C. WALLACK, JR.

Track Coach, North Syracuse High School, North Syracuse, New York

THE Greek discus thrower has become one of the symbols of athletics, yet it is true that few high school and college boys today know how to throw the discus. It is truer that few high school and college discus throwers know how to throw the discus. The event is complex, and is often taught according to a *go out and see what you can do* method. A sound and simple teaching technique, through which a high school boy can learn to throw the discus correctly, would be one of the things which might improve discus performances all the way up the line.

We would like to present one method. It is not the only method, and perhaps not the best, but at least it is a simple and quick way of teaching this difficult sport to a youngster. The coach must remember that of all events this one is the most dangerous, not only to the thrower himself, but to the innocent bystander. A discus which slips out of a boy's hand can break the leg of a spectator who considered himself clear of the throwing area. For this reason the discus field, especially for beginners, should be isolated from the other facilities, and at least during practice sessions should be open only to discus throwers. Early teaching and continued emphasis upon safety rules are necessary. The rules should include: 1. Only one discus in action at a time. 2. All boys behind the circle while throws are being made. 3. Strict adherence to the order of throwing. 4. No horseplay whatsoever.

The field should be set up so there are two circles, one at each end. In this way, after all throws have been made, the boys can run out, collect their implements, and throw back from the other end of the field. No returners are necessary; no one needs to be on the field during throwing practice. Of

course, on meet days and during distance trials a measurer will be needed. He, or they, should be assistant coaches or experienced boys who know the event.

Remember safety should be placed before distance, and although a coach may not have the best discus throwers in the state, he will have all his boys in every meet. Distance will come, but a boy cannot throw at all if he is disabled due to an injury.

Teaching discus throwing should not start until the boys are in good physical shape. Their backs, shoulders, and arms should be strong and flexible; their abdominal muscles well conditioned, and their legs in good running condition. Do not neglect running for discus throwers; strong legs are as important as strong arms. When the boys seem to be rounding into shape, it is time to teach them the fundamentals of the standing throw.

Take them to the discus circle and let them watch some of the experienced boys. Then allow them to throw a few times without any instruction. Have them watch one of the experienced boys go through the motions of the standing throw. While the beginners are throwing, the coach can, by careful observation, learn a number of things. He can discover: 1. Which boys are the strongest, and with these boys, form will be the major point to emphasize. 2. Which boys seem to get the knack without any instruction. With these lads pinpointing error correction will be the coach's task. 3. Which boys have major form faults that must be corrected. 4. Which boys are right-handed and which ones are left-handed. With this information in mind then the coach can proceed.

The first steps should be taken

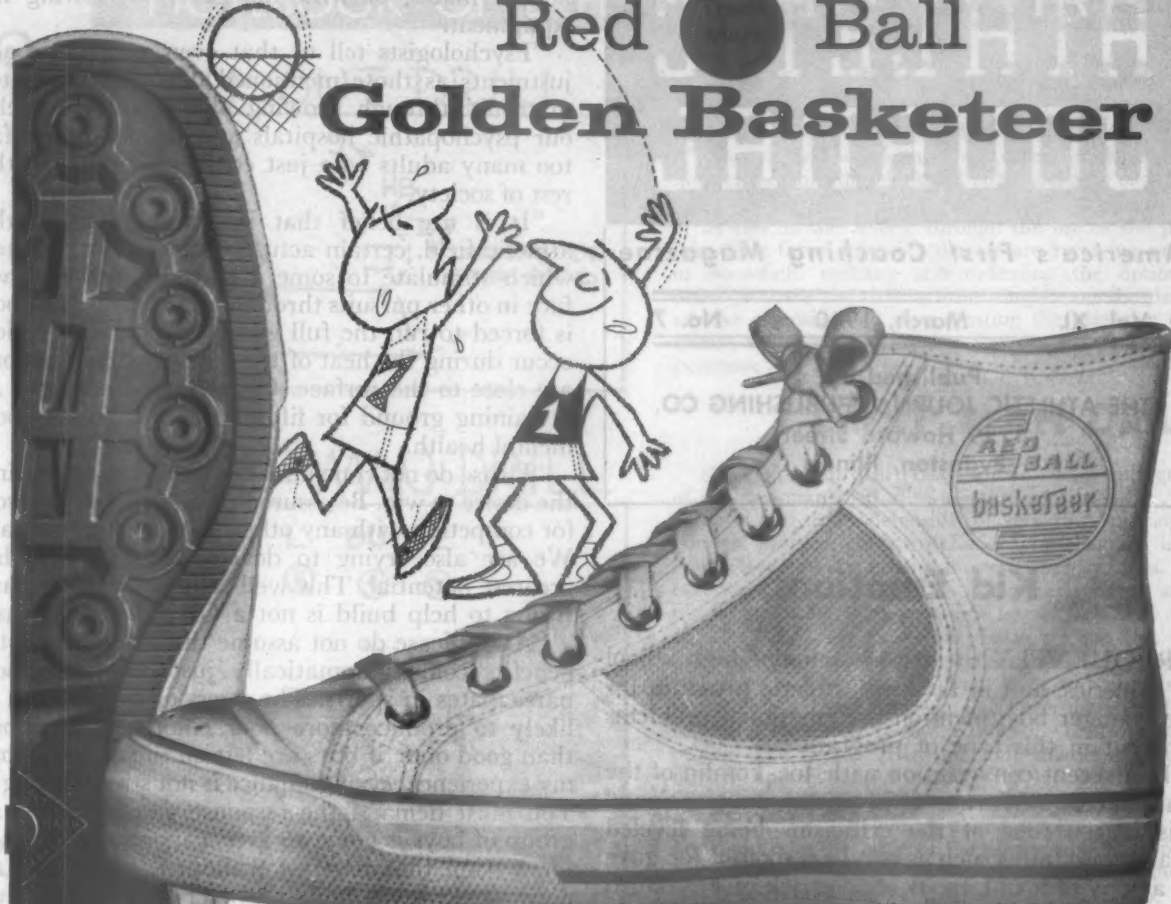
without a discus. All instructions are for right-handed throwers. Place the boys on a line, with their feet about 18 inches apart, the right foot back about 18 to 24 inches, and their shoulders squared to the front. Give the boys plenty of room to swing their arms. The idea of this work is to teach them how to wind up or coil their bodies and then swing around, uncoiling, to throw the imaginary discus. The steps are as follows (for a right-handed thrower): Stand on the line facing the direction of the throw, with the arms chest high and bent so that the hands rest against the chest.

On the count of *one* the thrower should turn around to the right as far as possible, shifting his weight to the right or rear foot, and at the same time bending his knees. His body should assume an almost seated position. Then his arms should be brought away from his chest and straightened. They should also swing around to the right as far as possible. The athlete's head and eyes should be forward in the direction of the throw. The action should be that of coiling. It can be described to the boys as that of a wood screw being turned into the ground. The thrower's head, due to the bending of his knees, will be lower at the finish of the move than at the start. His entire trunk will have taken a 135 to 180 degree swing around to the right. The thrower's head and eyes should be directed toward the field so that when the boy learns the turn he will always be moving in the right direction. This direction orientation is one of the secrets of fast learning in the discus throw. Another important consideration is that his hand must be turned farther than his shoulder so that when he starts his uncoiling motion

(Continued on page 57)

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ATHLETIC JOURNAL

America's First Coaching Magazine

Vol. XL March, 1960 No. 7

Published by
THE ATHLETIC JOURNAL PUBLISHING CO.
1719 Howard Street
Evanston, Illinois

Kid Emotions

FREQUENTLY the critics of junior high school athletics, and in fact any athletic program for the younger boy, mention the emotional problems inherent in this type of program.

In a recent conversation with Joe Tomlin of the National Pop Warner Conference, we mentioned this fact as one of the criticisms being leveled against programs such as his. In response, Joe gave us a copy of a talk by W. L. Surrick of Frankford High School in Philadelphia. Portions of this talk are reprinted.

"Kid emotions is actually a misnomer. All humans experience the same emotions, regardless of age. There is no set of emotions peculiar to children alone. There is, however, a definite child psychology which attempts to interpret and emphasize the best and subjugate the more undesirable tendencies. It is simply that the youngster is experiencing these various urges for the first time, and has no backlog of experience to guide him. He is anxious to please and be accepted, but he is in need of good adult guidance to help him in forming an accepted pattern of behavior.

"We are handling a young person whose natural reaction is to cry when unhappy, to sulk when displeased, and to show off or boast when on top. Experience has taught us that if we wear our emotions on our coat sleeve and release them impulsively, the road is rougher. A well-adjusted adult has brought his emotions under control.

"The natural inclination of a very young boy who owns a bat and ball is to try to dictate his desires. He tries to make the rules, place the other players, and run the game completely. He soon learns that this does not meet with group approval,

and finds himself either with fine equipment and no playmates, or with the group borrowing his equipment.

"Psychologists tell us that even such basic adjustments as those mentioned do not come automatically through growing older. Unfortunately, our psychopathic hospitals and prisons house far too many adults who just could not adjust to the rest of society.

"It is my belief that in competition on the athletic field, certain actual situations are created which stimulate to some extent the problems we face in other pursuits throughout our lives. The boy is forced to run the full gamut of emotions which occur during the heat of the battle, when emotions are close to the surface. Competition can serve as a training ground for life and as a base for good mental health.

"Please do not conclude that we are soft-pedaling the desire to win. Be assured that is our only reason for competing with any other team on a given day. We are also trying to develop each boy to his greatest potential. This well-adjusted man we are trying to help build is not a Casper Milquetoast.

"Also, please do not assume that these idealistic benefits come automatically just because a boy participates in sports. The stress of competition is likely to produce more poor emotional reactions than good ones, if boys are left on their own. From my experience, even guidance is not strong enough. You must demand the response you want. What group of boys is going to give a spontaneous cheer for a team that has just walloped them? Just as none would say a huddle prayer without the fine example set and encouraged by the Pop Warner Conference.

"It remains the duty of the coach to instruct the boys in the specific behavior patterns which help produce the benefits mentioned thus far. He must break them down and present them again and again, just as he does his plays and techniques."

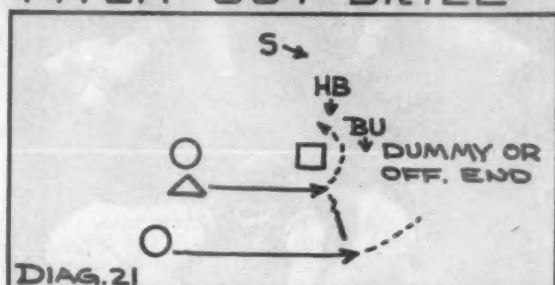
Where Do You Draw the Line on Overemphasis?

ABOUT the middle of July we happened to be driving by one of the high schools in the northern part of Illinois and noticed a squad of some ten girls practicing their cheerleader antics. We understand that cheerleading camps and clinics are common, many being held during the summer months.

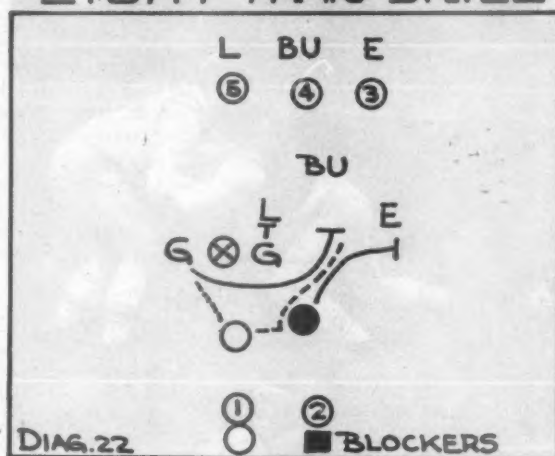
Most, but not all cheerleading and pep club activities are centered around athletic contests. This brings up a rather interesting question — if overemphasis upon athletics is wrong, why wouldn't overemphasis upon the activities used in conjunction with athletic contests also be wrong?

NOTEBOOK OF DEFENSIVE FOOTBALL DRILLS

PITCH-OUT DRILL



EIGHT-MAN DRILL



The drill shown in Diagram 23 is basically an offensive drill; however, as much advantage is possible for defensive skills, because different defensive alignments such as the 4-4, 4-5, 5-3, 5-4, 6-2, 6-3, 7-1, 7-2, 8-, and 9-man lines are possible in addition to the various stunting that goes with the defensive strategy. There is no deep secondary. From an offensive viewpoint, the drill should be used to give blocking experience for the four or five *bread and butter* plays such as the dive, off-tackle, delayed buck, cross-buck, and the pitch-out. These are the basic plays which the offense must master against any defensive alignment.

The drill can be run as a full scale scrimmage; however, it may be more effective if it is used against half of a defensive line at a time thus allowing the coaches to check the blocking and other offensive details. The defense should also have the benefit of a coach.

For better offensive results the defense should place as much pressure as possible on the offense. The defensive players should be told whether the play is coming

PITCH-OUT DRILL 2

As shown in Diagram 21, two offensive men are playing on their own without any offensive blocking. The quarterback has the choice of either keeping or pitching out to the halfback. He can fake a pitch-out and keep, or he can do the reverse through the use of the proper fake. The three defensive players are receiving practice in open-field tackling and defending the option. In order to make the drill a little tougher on the defense, add an offensive end thus creating the offensive threat of the running pass. Do not use the end for blocking purposes.

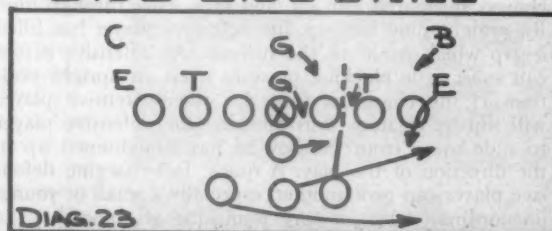
EIGHT-MAN DRILL 2

The eight-man drill (Diagram 22) is an enlargement of the five-man drill allowing three-on-three, i.e., three blockers on three defensive players thus placing the greatest pressure on the defense. The diagram is self-explanatory except for the interchanging of lines. Lines one and two, comprising all backs, interchange among themselves. Line three does not interchange. All of the ends and probably some backs make up the line. Often in college football there is a surplus of backs. Lines four and five do interchange. These lines are comprised of the guards, tackles, and centers. The exchange of lines four and five must follow a different course from the others. The first man in line four should drop to the tail of line five after completing his defensive stint. The first man in line five would take his position at L which is a defensive guard position. From there he would take the place of the player who had opposed him offensively. The latter moves over to offensive left guard and does the pulling on the backer-up. After pulling and blocking, he has completed the cycle which brings him to the end of line 'four.

THE ONE SIDE DRILL 2

to the right or left of the center. Players not involved do not scrimmage. The players, both offensive and defensive, on the side of the ball runway go at full speed. When there is one, the middle backer-up is included. Plays should be alternated right and left consecutively.

ONE SIDE DRILL



Prepared as a feature of ATHLETIC JOURNAL, Sept. 1959 — June 1960
By George 'A. Katchmer, Football Coach, Millersville, Penna., State College

4 INDIVIDUAL DEFENSIVE TACTICS

Sprinter's Charge

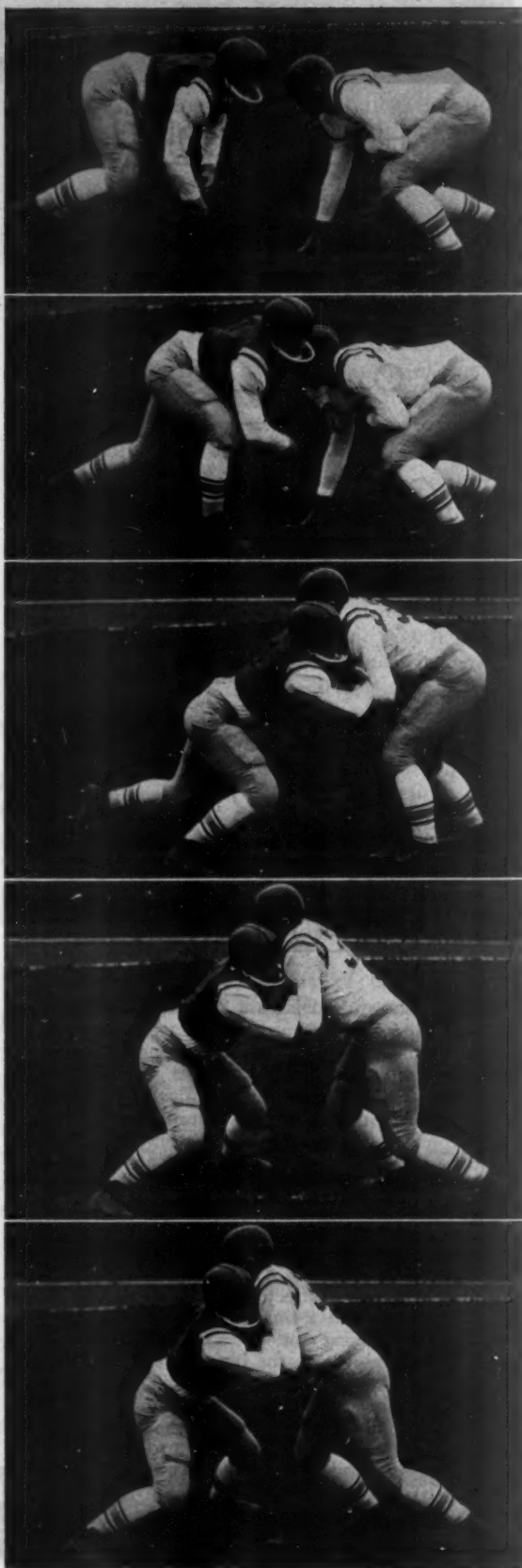
Linemen should be taught all types of individual defensive skills through the use of demonstrations followed by slow motion or live scrimmage. In live scrimmage the blockers cooperate in order to avoid injury to the defensive player because they may be aware of the defensive maneuver. The defensive tactics to be described will aid players against the one-on-one block, two-on-one block, and the wedge thrust. These skills are not easy to learn. Furthermore, no player can be expected to become proficient in all twelve. If he can master about five or six, he will have the ability to meet the balanced or unbalanced line. Some players become quite adept at all twelve, especially in their junior or senior years when experience and maturity are determining factors in their growth and development. These are the players who make the all-star teams.

The tactics which will be explained are those employed in the one-on-one and two-on-one drills. The roll-off from a block or double-team, and the trap maneuver have been described in the two-on-one drill. They will not be explained again but are mentioned here to emphasize that both are included in individual defensive tactics.

The first tactic, or sprinter's charge, is used primarily against the double-team or two-on-one situation. One player is seldom better than two players. It is folly for one man to try to fight two men on the line of scrimmage. They will overpower him. A player must be able to discharge his defensive responsibility whether there are one or two blockers. The sprinter's charge is taught to get a defensive player into an opponent before he can get his offensive charge into high gear. In this tactic the boy is taught to assume a four-point stance across from his opponents. During the first five minutes or so of a game, sometimes less, he should experiment by hitting one or the other of his opponents, probing to find out which of the two is weaker or less inclined to take punishment. Once the defensive player has found his man, he should concentrate on him for the balance of the game. Punish one man and eventually he will block half-heartedly, allowing the defensive man to penetrate for tackles. If he does not give in, but turns out to be a tough player, then a merry afternoon is in store for someone.

The defensive player should spring from the four-point stance into the arms of one offensive player. He should come up under the offensive player during the charge, straighten him up, and then drive through him. By straightening him up, the defensive player has filled a gap which could be the runway. An offensive player can exert little blocking pressure from an upright position. If the charge is fast, the other offensive player will slip by or miss, thus allowing the defensive player to slide away from the boy he has straightened up in the direction of the play. A quick, fast-charging defensive player can give another, especially a small or young, uncoordinated boy, a very punishing afternoon.

This defensive tactic and those to follow were illustrated by members of the Ferris Institute football team coached by Sam Ketchman.



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Hayes Jones — Record Breaker

By GEORGE MARSHALL

Track Coach, Eastern Michigan University, Ypsilanti, Michigan

THE high hurdle race is a beautiful event to watch when outstanding performers are running. It can also be a disastrous event even for the best, as Harrison Dillard could have testified after the 1948 Olympic tryouts in Chicago. We emphasize to our hurdlers that the competitor cannot defeat them as quickly as the ten barriers out in front. Therefore, concentration is emphasized on each hurdle as it is taken.

Over the years, we have had some outstanding hurdlers at Eastern Michigan University. A few of these are: Eugene Beatty, three-time winner of the 400 meter hurdles in the Penn Relays; Kenneth Simmonds who was Beatty's running mate; Charles (Whitey) Hlad; Garion Campbell; Norbert Badar; Keith Gundrum; James Brodie; and Duane Root — plus many others.

Since 1957, Hayes Jones, who is now a junior, has been establishing quite a reputation as a sprinter and hurdler. Hayes was born in Starkville, Mississippi on August 4, 1938. The family moved to Pontiac, Michigan when he was three years old.

Hayes attended elementary and high school in Pontiac. While in junior high school, he participated in athletics under Ray Lowry, who taught him the fundamentals of hurdling. Walter Schloerke was his high school coach. Hayes competed in the high and low hurdles, and the broad jump under Schloerke. As a senior, he established state records in these three events.

We were watching this boy develop during these years and knew that if he could make the adjustment from the 39 inch hurdles to the college 42 inch high hurdles, we had a national champion in the making. Hayes is only 5 feet, 10 inches tall, which is short for a college high hurdler. Upon entering Eastern Michigan, we worked him over the college highs and he made the adjustment very quickly. The big surprise was when he was rejected by the ROTC due to a short leg. Hayes' left leg is three quarters of an inch shorter than the right. His left leg is his trailing leg.

As a freshman, Hayes lost his first high hurdle race to Bob Thomas of

Marquette. This was his only loss in dual meet competition. However, during his freshman year he gained recognition nationally. As a sophomore, he became the national indoor and outdoor high hurdle champion. Hayes earned a trip to France in his freshman year, and as a sophomore he traveled to Russia to compete against the Russians.

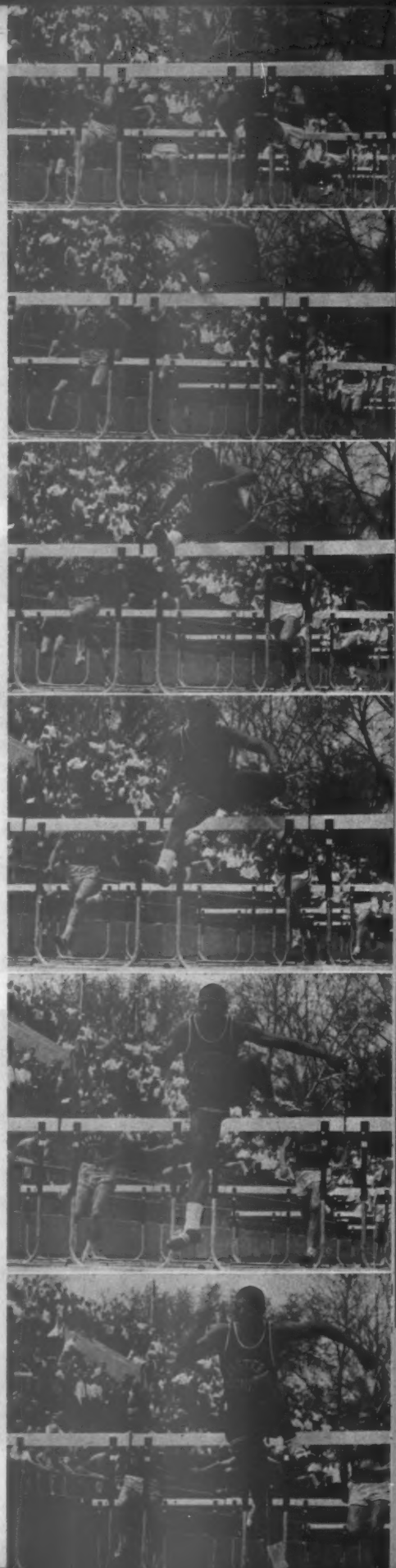
During his freshman year we discovered just how fast Hayes really was. On May 17, 1957 we entered him in the 100-yard dash in the IAC meet. He ran a 9.4. In this conference meet he established records in the 100, the high and low hurdles, and the broad jump. His high hurdle time was 14.4; low 22.9; and his distance in the broad jump was 24' 3/4".

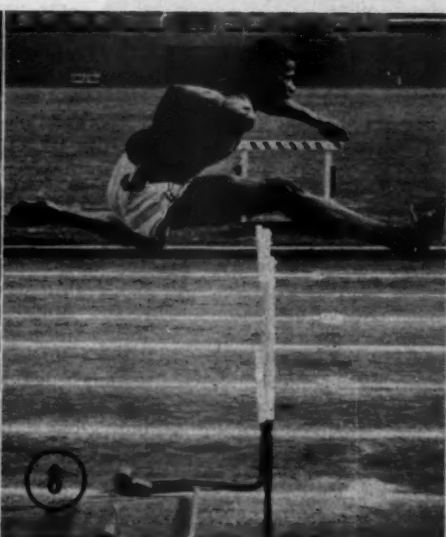
As a sophomore, Hayes won the high hurdles in the Chicago Daily News Meet in 7.00, equaling the American record. *(He repeated this performance in Boston this year — editor's note).*

The accompanying sequence pictures show what we believe to be the most accepted form in hurdling. Observe the principle of leading with the knee toward the hurdle (Illustration 1). Emphasis is placed on dipping over the hurdle which will place the trailing leg in position with the proper split (Illustrations 2 and 4). The flexed knee over the hurdle which assists in the quick snap-down is shown in Illustration 3. Illustration 5 shows the recovery of sprinting position as the lead leg strikes the ground. Good follow-through with the trailing leg so that the sprinting stride is not shortened is shown in Illustration 6.

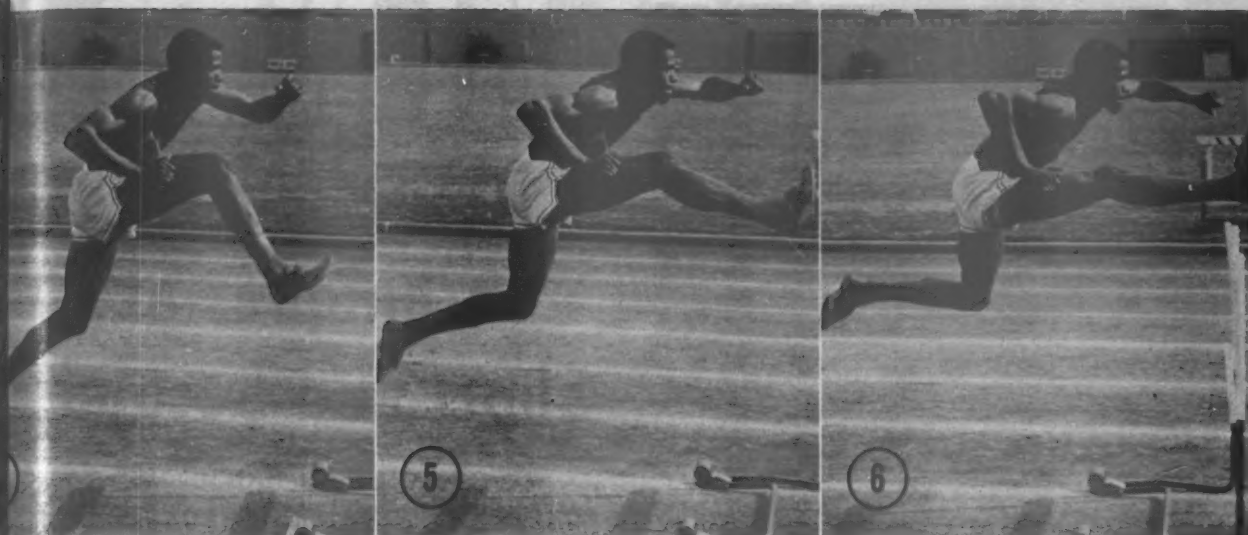
Jones' vision is poor. He must wear glasses with heavy lenses for reading, but removes them when he is hurdling. Poor vision led him to develop a fine sense of timing. Hayes just seems to know where the hurdle is although he sees it as a blur. Perhaps his greatest fault, and it is a common one in the case of the sprinter type hurdler, is that he comes out of the blocks with such a tremendous burst of speed he often crashes the first hurdle. Most coaches correct this fault by having the blocks set farther back or having the runner

(Continued on page 51)





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Elias Gilbert Over the Highs

By WILBUR L. ROSS

Track Coach, Maryland State College, Princess Anne, Maryland
(Formerly track coach at Winston-Salem Teachers College)

ILLUSTRATION 1 shows Gilbert still on the approach side of the hurdle. His weight is beginning to shift forward, and he is starting to raise high on the toe which is still on the ground. His arms are carried waist high so he can get into his body pitch as low as possible. Watch the position of his right arm throughout this series of illustrations. It will act as a guide in helping him maintain his balance.

Gilbert's weight is farther forward (Illustration 2). He is higher on his

toes, and his left arm is beginning to move toward its extended position. His lead leg is lifted straight up in front of his body.

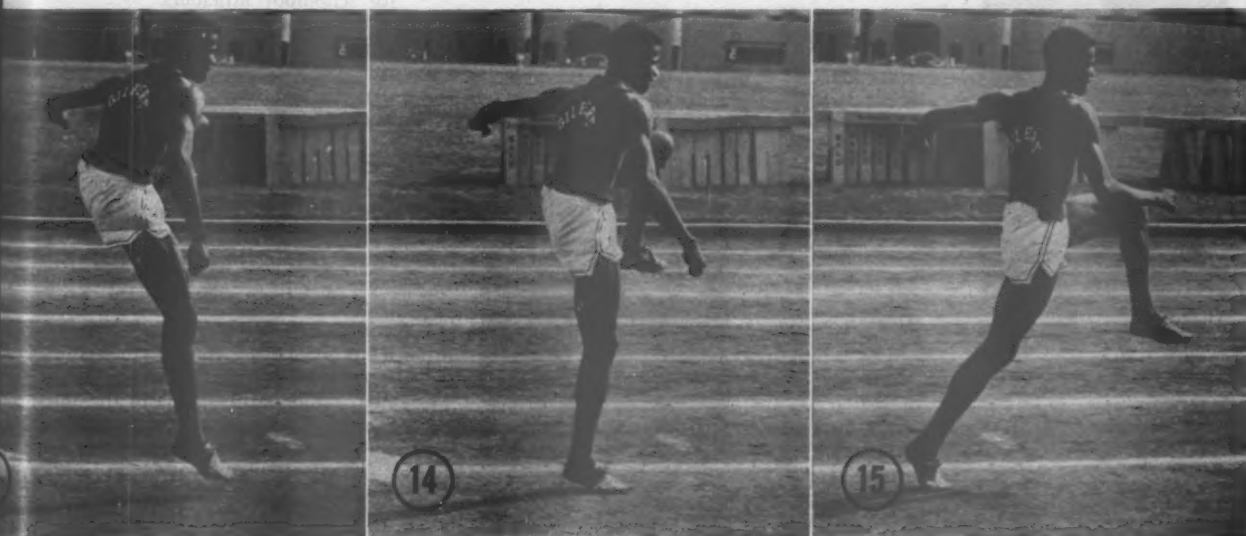
The next position (Illustration 3) is assumed just before Elias' body is lifted from the ground. Perfect balance at this point is shown in the lead leg. His head, knee, and toe are in perfect alignment. Gilbert is as high on his toe as possible, and his lead leg has moved to its highest position before going into the flight.

Illustration 4 shows Gilbert off the

ground and starting to extend his left arm. His head has moved to an advanced position which indicates that the center of gravity has shifted forward. The position of his right arm has changed. His trailing leg is at its first stage in the hip circle.

Early in flight Gilbert's shoulders are squared and he is bending at the waist to the point where his head is directly over the knee of his lead leg (Illustration 5). His lead leg is almost fully ex-

(Concluded on page 44)





The underhand feed. Illustration 1.

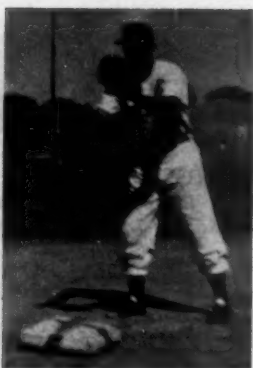
Double Play Techniques at Short and Second

By WILLIAM H. HATCH

Baseball Coach, Porterville, California, High School

Series A

The catch and the tag.



This illustration shows hesitation before reaching the base.



The pivot.

In addition to showing the follow-through, this picture illustrates the important point of lifting the leg to clear the baseline.



NO other play in baseball exemplifies perfect teamwork more than the double play movements of the shortstop and second baseman. Every day major league players make the double play with seemingly effortless grace. The same opportunities are present on high school and college diamonds but the results are less effective. There are many reasons why the lower levels of baseball cannot complete the same double plays that major league shortstops and second basemen handle routinely. However, the major factor is knowing the fundamentals of the double play and applying them correctly.

In order to start a successful double play, the shortstop and second baseman must be in the correct position. For years broadcasters of big league games have said: *the infield is back for the double play*, until young ball players picked up the idea they must retreat to a deeper position than normal. Actually, just the opposite should be the case for schoolboy infielders.

We use a starting rule of two for our double play situations. In applying this rule, the shortstop and second baseman play in two steps closer to the batter and over two steps closer to second base than they would normally. Thus the distance the ball must travel between the batter and fielder is decreased and the distance the pivot man must travel to second base is narrowed. By decreasing these distances valuable time may be saved which often means the difference between a double play and a fielder's choice. As our infielders learn the power and speed of the batters and the speed of the runner at first, minor adjustments in the starting position may be made. However, until they do, the rule of two is employed.

The double play may be broken down into two parts — the feed and the

(Continued on page 63)

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RNAL



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NAME _____
TITLE _____

Preventive Conditioning and Reduction of Knee Injuries

By KARL K. KLEIN

Assistant Professor, Department of Required Physical Education,
University of Texas



Illustration 1 shows the starting position. The subject sits on the bench with the edge of the bench three to four inches behind the popliteal space of his knees. His feet are placed beneath the adjustable bar, and his trunk is perpendicular.



On the count of one, the subject forcefully straightens his knees. As his legs extend, his trunk is raised above the bench (Illustration 2).



On the count of two, the subject comes to a full leg extension. His body weight is supported by the bench at the point of contact with the posterior aspect of the thigh. His trunk remains perpendicular. A backward lean increases the difficulty of the exercise (Illustration 3).

EVIDENCE presented in the annual athletic injury reports indicates that the scientific development of protective equipment for players has resulted in a major reduction in the incidence of injury in all areas of the knee. As a basic evaluation it might be stated that, *the only way for effective equipment to protect the knee from injury potential would be to stabilize it in a locked position.* This, of course, is highly impractical when dealing with the mobile situation of athletics where motion and the ability to react and move quickly are of prime importance. It seems then that knee protection is dependent upon qualities other than those derived from stabilization. These qualities are present in all athletes, as well as in all people.

Today there are methods of progressive resistive exercises which are accepted as a vital part of rehabilitation programs and are used extensively in restorative treatment. These same methods with additional modification of acceptable weight lifting techniques could also be utilized effectively in the preventive phase of conditioning. However, there are problems of time, administration, and individualized program planning which would necessarily be involved with a squad of 30 or 40 players. Although these problems should be of major concern to the trainer and coach, it is impractical to assume that it would be feasible to set up a program of this type for the average size squad. Still it is necessary to seek mass exercise methods that would be administratively sound in such items as: 1. Ease of technique and application. 2. Time-saving consideration. 3. Progressive resistive styling. 4. Minimum of equipment. 5. Proven experimental test application and results.

An extensive review of the periodicals from 1930 to the present time indicates that the problem of knee injury is one of considerable magnitude according to the latest composite report published by the National Athletic Trainers' Association. This report contained injury data from approximately 65 colleges and universities, and placed knee injury as the number one enemy of football and athletics in gen-

eral. Numerous authors concur on the values of specific exercise for injury prevention but few have outlined procedures for accomplishing the desired goals of massive muscular strength and power for reducing the medial and lateral hinging effect which is largely responsible for the medial and lateral ligament and cartilage problems. There is also an apparent lack of emphasis on the importance of muscular flexibility regarding its value as an important phase of the conditioning efforts. Muscular flexibility should go hand-in-hand with the strength and power building program. In this phase of the program, simple muscular stretching movements, following the exercise period, will maintain muscular elasticity and flexibility thus enabling the musculature to operate at its maximum efficiency. Undoubtedly, the question of the relationship of ligament strength, as a preventive factor in knee injury, will be considered by those who are looking at the structure and its support in total function. Although there are pros and cons to the issue, it should be recognized that:

1. As the related structures are strengthened, it is practical to assume that ligament structures will react in the same manner, providing they are not overstretched in the process.
2. That the best protection for the strength of the ligaments is muscular strength.
3. That as the knee is flexed the ligaments start into a decontracting relationship and offer a lessening protective effect as the knee becomes more functional through motion. When the knee is flexed to its mid-position, all the ligaments are in a phase of equal relaxation and it may be concluded that they offer a minimum of protection against injury at this point.

In fact, we might visualize the protective qualities of the muscular structures at this angle, and assume that major protection in this position is placed on the hamstrings because of the decontracting phase of the quadriceps.

Regarding the problem of specific conditioning of the muscular groups in question, it must be recognized that

(Continued on page 54)

new

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Man On a Rope

By JACK OLCOTT
Football Coach, Millersburg, Ohio, High School

AS the title of the article indicates, our pass defenders are on an imaginary rope. When the passer moves or sets up in one direction, the defensive players follow as they would in a game of follow the leader.

The man on a rope defense is a zone defense. This defense gives us at least two defenders on the potential receiver, and often as many as six defenders. It will be seen that the odds are definitely on the side of the defense.

Our pass defense is a team effort in which all eleven players participate. Each man has a specific assignment and if one player misses his assignment, the defense is at a definite disadvantage. Each player has approximately the same defensive assignment in all of the patterns. Usually, the same amount of practice time is spent on pass defense as on pass offense. Actually, the pass defenders go into the correct defensive patterns automatically as a result of constant practice.

In order to simplify our defensive zones, each area is lettered. *W* and *Y* are the zones for the corner men and *Y* are the linebackers' zones. The *A*, *B*, and *C* zones are the danger areas for the three deep men (Diagram 1).

On a straight-back pass, the passer does not roll outside his own tackle. The defense uses a predetermined call — let us say *regular*. This call means that the left halfback has the *A* area,

the safety has the *B* area, and the right halfback has the *C* area. Our right defensive end covers the *Z* area (Diagram 2).

In case of a roll-out pass, the pass defenders rotate toward the direction the passer moves. As soon as the passer rolls outside his own offensive tackle, the defensive captain, the defensive team, and the squad on the bench shout, *roll out*.

This is an excellent example of the man on a rope. The right halfback has the option of rushing or playing the *Z* area. This option is usually determined by the running ability of the passer and the amount of yardage needed for the first down or touchdown. All of the defenders are on a rope with the exception of the left end who drops off into the *W* area, and then rotates through the *A* area (Diagram 3).

In case of a flanker, man-in-motion or homesome end, the deep men rotate to the strength of the offense. For instance, if the offense flanks a halfback out 15 yards, the halfback would split the difference and the defense would disregard the call and play regular coverage.

A change of pace in the defensive pass pattern is the roaming safety man. He uses a predetermined call and can either rush a sweep, roll out the passer or cover a hook pass receiver. The call may be *roamer right*. This means that

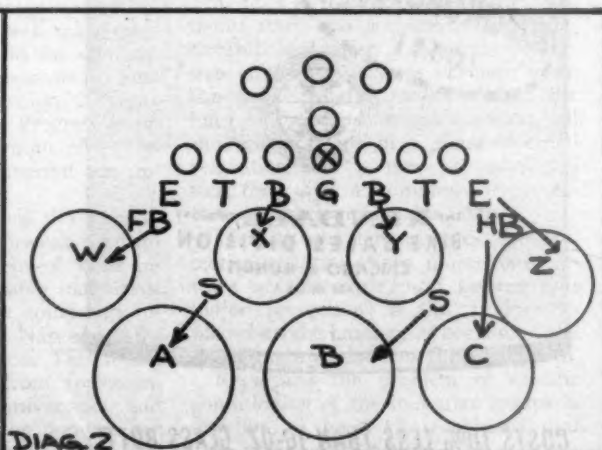
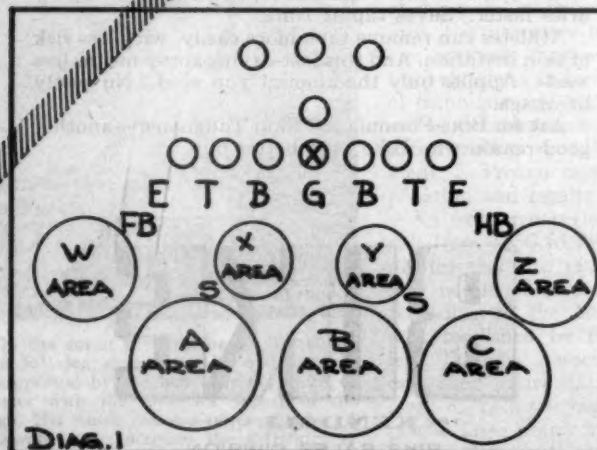
the predetermined coverage is on and he can start to move before the ball is put into play. This type of movement (before the ball is snapped) places the pressure on the offense. This move may upset the blocking patterns of the offensive sweeps and reduce the percentage of completed hook passes.

It is easy to see that the three-deep situation still exists with the familiar yet somewhat disguised pattern (Diagram 4).

Jack Olcott played one year at Denison and one year of service football before returning to compete for three years at Denison. During the 1958 season he served as backfield coach at Madison High School, Mansfield, Ohio, and last season moved out on his own as head coach at Millersburg.

Our teaching philosophy is positive. When the opponent throws the ball into the air, it is ours. This positive approach instills confidence in the player and in the entire defense. Whenever a passing down is expected, our players are not worried; on the contrary, we want the offense to pass. Through constant practice and the rope pass defense, we feel the odds are with us. The pass defenders are taught to make a bona fide attempt to intercept the ball by going through the head of the potential receiver. We play the ball and not the

(Continued on page 68)



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Recharge Your Battery With Strategy

By JAMES SMILGOFF
Taft High School, Chicago, Illinois



Series A

THROUGH the years catchers and pitchers have wondered how to select each pitch to be thrown against opposing batters. They are often in need of some type of strategy which can be applied in an attempt to outwit each batter. It is common knowledge that most batters try to anticipate or even guess outright what the next pitch will be. Many of these batters give away their thinking pattern at the plate through some physical mannerism or peculiarity. By becoming acquainted with these actions and mannerisms, the pitcher and catcher may outwit some of the batters they face. A batter's physical actions often reflect his mental philosophy, which may provide the opposing pitcher and catcher a strategic basis to use in making each pitch selection. Following are some of the strategic battery rules which are acceptable in professional baseball circles as a reference point in pitch selection. These rules have been tried and proved at the high school and college baseball levels.

In the following rules of battery strategy it is assumed, unless otherwise stated, that a right-handed pitcher is facing a right-handed batter or a south-paw pitcher is facing a left-handed hitter.

1. Pitch fast balls outside and break-in pitches to foot-in-the-bucket and

off-the-heels hitters (Series A). These hitters pull their weight and batting leverage away from the plate early in the swing, making it difficult for them to reach the outside part of the strike zone effectively. Thus pitching away from their swinging leverage which covers the inside part of the strike zone, is no more than good common sense since the ball is being thrown toward the batter's weakness.

2. As a rule, when a batter fouls a fast ball pitch behind him it is safe to come back with the same pitch. Experience has shown that a batter who is slow in his timing on a fast ball will not suddenly adjust to perfect timing on a succeeding fast ball. Furthermore, the batter may expect a curve ball on the next pitch. This anticipated curve ball pitch will slow up his mental timing perspective to a greater degree than would an expected fast ball.

Jim Smilgoff played under Art Mansfield at Wisconsin and has been closely connected with the game of baseball for a quarter of a century as a high school coach at Taft High School (Chicago), a writer of numerous articles and the popular textbook, "Winning High School Baseball," a scout for the Chicago Cubs, and as a coach and director of youth leagues. Smilgoff was promoted recently to the administrative branch of the Chicago School System and was forced to give up high school coaching.

3. Pitch fast balls high and inside to a batter who stands ahead of the plate (Series B). This type of batter usually takes his position in the batter's box because he is weak against the curve ball and hopes to hit that pitch early in its break while it is still passing over the inside or middle of the plate. Fast balls inside, preferably between the belt and the armpits, usually bother this type of batter.

4. Throw high inside fast balls to batters who have a hitch, dip or a long backswing (Series C). The batter who possesses a hitch does not bring his bat back smoothly in cocking his wrists preparatory to the forward swing of the bat. He cocks his wrists by jerking the bat backward in two or more movements thus creating a sudden stop and start action which slows up his timing by hampering the quick, supple, smooth action which is needed to propel the bat forward quickly enough to meet the inside fast ball.

The batter who dips his bat lowers it considerably in cocking his wrists preparatory to the swing. This movement slows timing, and creates an upward arc of the bat which is referred to as upper-cutting.

The batter who possesses a long backswing makes the bat travel farther in the cocking of his wrists preparatory to the forward swing of the bat. This

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Series B (Left)

motion delays the forward movement of the bat and results in slow timing.

5. *Throw slow, breaking pitches to long striders and lungers (Series D).* These batters transfer their body weight too much and too soon on their stride. Because of this action they dissipate their power too soon against slow curves and change-of-pace pitches.

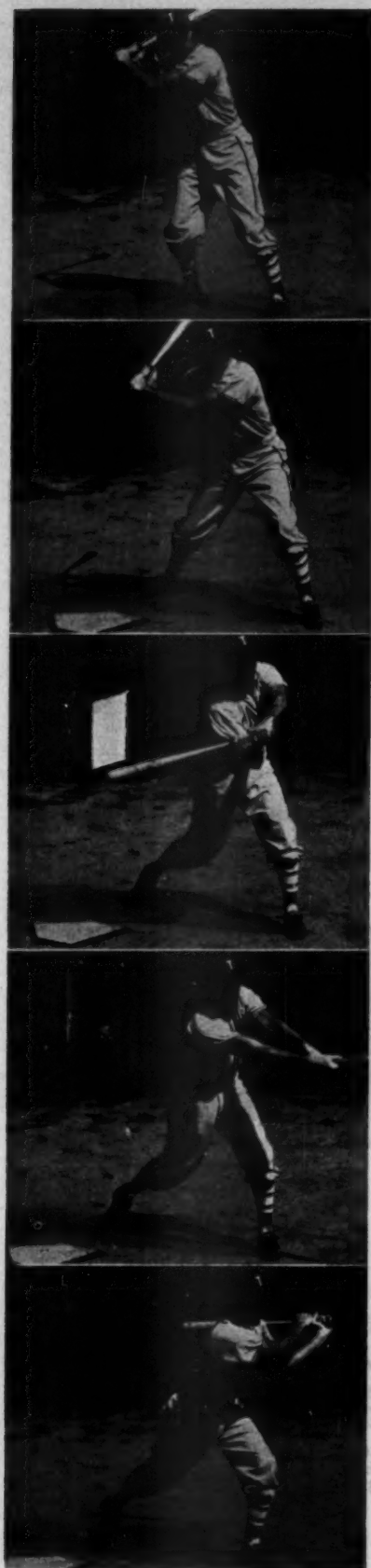
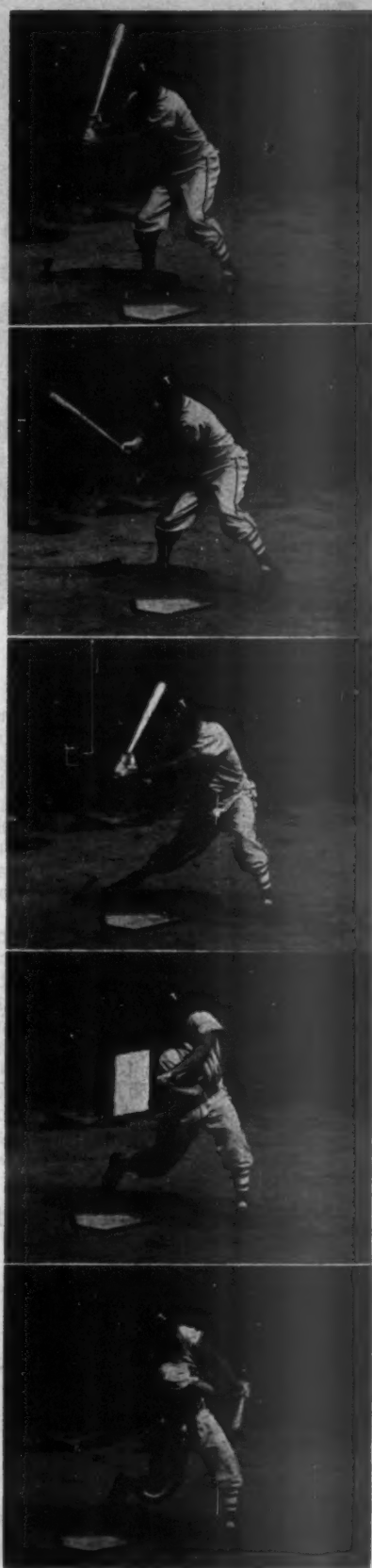
6. *It is usually best to follow a change-of-pace pitch with a fast ball pitch.* This pitch forces the batter to change his timing to the extremes of his mental and physical ability — from extremely slow timing to extremely fast timing. The maximum amount of adjustment ability is needed by the batter in order to hit the ball correctly.

7. *Cross-fire pitches are most effective on the outside half of the plate when they are thrown with two strikes on the batter.* The cross-fire is an intimidating pitch, and it possesses an element of surprise. From both standpoints it should not be thrown too frequently since frequency will acquaint the batter with the pitch. When there are two strikes on the hitter, the successful cross-fire pitch results in an out. With less than two strikes the batter has the opportunity of facing a different type of pitch after the cross-fire, or two or more successive cross-fire pitches. In either case, the effectiveness of the cross-fire pitch is reduced. Since this pitch is used to drive the hitter away from the plate it should be pitched outside and away from the batter's pulling power.

8. *Never throw a change-of-pace pitch to a wide stance hitter.* The purpose of the change-of-pace pitch is to disrupt the batter's timing. This is most easily done against batters who take a long stride. The longer the stride, the greater the transfer of body weight, and the more effective the slowly approaching change-of-pace pitch will be. The wide stance hitter takes little or no stride, which results in a minimum transfer of weight and very little adjustment in timing to hit the change-of-pace.

9. *Never throw a change-of-pace pitch as the first pitch to a batter.* Since the batter has not taken a batting stride against a pitch it is too big a gamble to guess how fast or slow his stride may be. Therefore, there is no visible measuring stick against the speed of his stride. Furthermore, a batter who may be planning on taking a pitch will still be able to time the change-of-pace pitch because of its slowness which may equal his mental

Series C (Right)



Series D (Left)

Shows lunging batter dissipating his power before the slow pitch approaches the swinging bat.

hesitancy.

10. *Serve breaking pitches to head turners (Series E).* The head turner turns his head and takes his eyes off the pitched ball too soon. He does so on the swing rather than after the swing. His head and eyes are pulling away from a pitch that may be breaking in the opposite direction. A batter's head and eyes must go with the widely breaking pitch in order to achieve batting success. Breaking pitches prove devastating to those batters who turn their heads.

11. *Pitch fast balls high and inside to a batter who crowds the plate (Series F).* While this advice does not always hold true it is generally successful. The batter who crowds the plate usually is trying to cover up a weakness which is either the high inside pitch or the curve ball. As a rule, it is best to start pitching high and inside to this type of batter during his first turn at bat, and then determine by his stride and swing what the pitching strategy should be.

12. *Pitch fast balls inside to bat pushers and lazy wrist hitters (Series G).* These hitters do not whip the bat around fast enough or far enough to meet the ball ahead of the plate with power. They are more apt to be successful against the outside pitch because of their slow and late swing. Fast balls inside usually handcuff them and result in many pitches being hit weakly by the handle of the bat.

13. *Pitch high inside fast balls to batters who uppercut (Series H).* This type of batter lowers the bat and swings in an upward arc at the approaching ball. He is apt to swing under the high inside pitch and lift it high into the air.

14. *When in doubt about what to throw, use a breaking pitch.* The batter is more apt to anticipate or guess a fast ball will be thrown than a breaking pitch. This is particularly true on the first pitch to a batter.

15. *Right-handed pitchers should frequently throw downward breaking pitches to left-handed batters.* The same holds true for southpaws when they are pitching against right-handed hitters. The downward breaking curve does not start out as far away from the hitter, so it cannot be as easily detected as when it starts out far away from the batter and then breaks in to him.

16. *With runners on the base throw*
(Continued on page 40)

Series E (Right)



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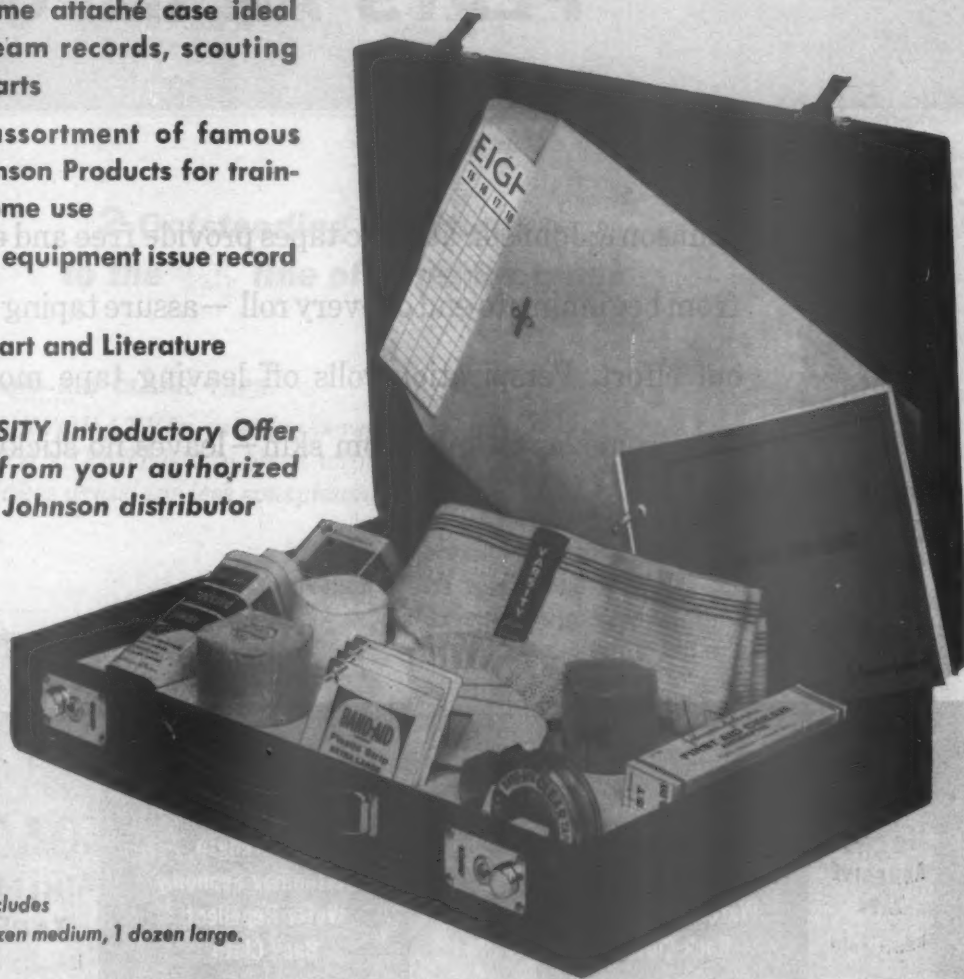
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Series F (Left)

more breaking pitches. Breaking pitches are hit on the ground more frequently for force plays and double plays than fast ball pitches. Since it is difficult to lift a downward breaking pitch into the air the opportunities to score runs on sacrifice flies are reduced. Furthermore, more batters have difficulty in hitting the curve ball successfully than the fast ball.

17. *Batters seldom look for breaking pitches when they are ahead in the ball and strike count.* This fact dictates the use of the breaking pitch under these circumstances, particularly with runners on the bases.

18. *After walking a batter on four fast balls, curve the next batter on his first pitch.* This change in pitch selection may break up the temporary wild streak in fast balls. It also provides a different control perspective for the pitcher when it is most urgently needed. A change in the pitching pattern which the batter may be anticipating also takes place.

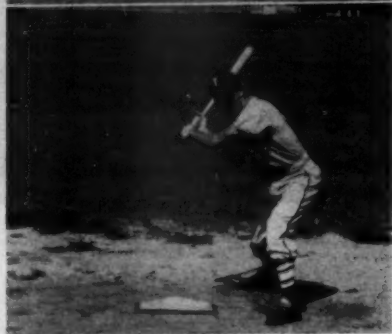
19. *It is usually smart to fast ball a hitter on a three and two count if the pitcher curved him on the three and one count, and vice versa.* Most batters expect a fast ball when they have a three and one count. Should the pitch be a fast ball strike, it is common for the batter to expect another fast ball. Most batters say, *If the pitcher fast balls on me on a three and one count, he is apt to do likewise on a three and two count.* The same thinking holds true when a curve is thrown on a three and one count. Most batters expect another curve.

20. *With first base open and runners in a scoring position, pitch to the corners of the plate and throw more breaking pitches.* With first base open it is foolish to give a good hitter bread and butter pitches. It is best to tease the batter into swinging at an off-the-corner pitch. Should the batter walk, a fresh start may be obtained against the following batter. This is considered good percentage pitching.

21. *With a count of three and two on a batter the pitcher should always shake off the first sign from the catcher even if he plans to throw that pitch.* This is good psychology to use in misdirecting the batter's thinking pattern. A shake-off by the pitcher leaves the batter in doubt as to what sign has been refused by the pitcher. A few shake-offs should

Series G (Right)

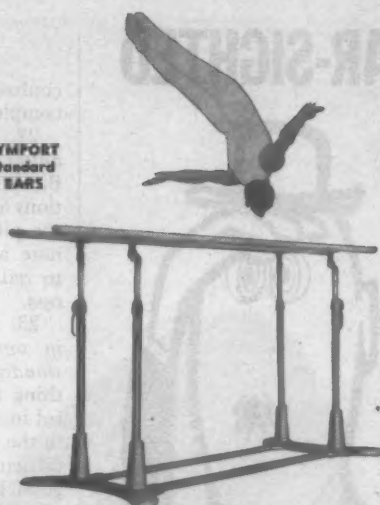
Shows how an inside fast ball will handcuff a lazy wrist hitter.



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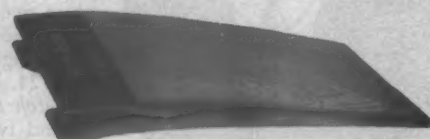


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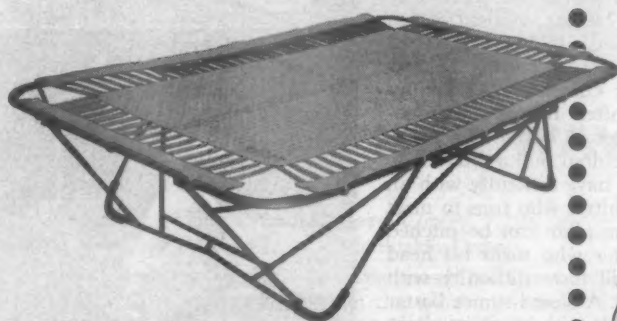
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Series II

confuse the batter's thinking pattern completely.

22. *Select the pitch according to the batter's actions on the previous pitch.* Batters often reveal what their intentions are by their batting actions against the pitch. Pitchers and catchers should note and study these actions in order to reduce the batter's chances for success.

23. *Never throw the same pitch twice in one turn at bat against an outstanding hitter.* This is a very difficult thing to do, yet it is often very successful in operation because of the diversity in the pitching pattern. It is universally difficult for any batter, no matter how good he is, to time a large variety of of pitches successfully. If variety is not available, then change the speed of the pitches. Fast balls and curves thrown at two or three different speeds should provide an adequate challenge in timing against most outstanding hitters.

24. *Set the batter up for a strategic pitch whenever possible.* With no balls and two strikes count on the batter a high inside fast ball outside the strike zone is a strategic pitch. Should it result in a called ball the batter is set up for any outside pitch selection. Curving a batter on the first two pitches usually sets a batter up for a high inside pitch. A change-up pitch usually sets him up for an inside fast ball. A sweeping curve ball outside following a change-of-pace usually sets a batter up for an inside fast ball.

25. *Look for batter weaknesses by studying the grip on the bat, position in the batter's box, stance, method of following the pitch, stride, swing, and mental and emotional batting characteristics.* Batting characteristics are revealing. They often reflect the intentions of the batter. A batter who pushes the bat will seldom pull a pitch. The slow strider will have difficulty with an inside pitch. A hitter who tries to meet the ball over the plate can be pitched inside. The batter who turns his head as he swings will have difficulty with breaking pitches. A closed stance batter usually has trouble with breaking pitches because the closed stance is a compensating device. The batter who pumps and moves his bat incessantly should be served slowly and deliberately. His nervousness should be exploited.



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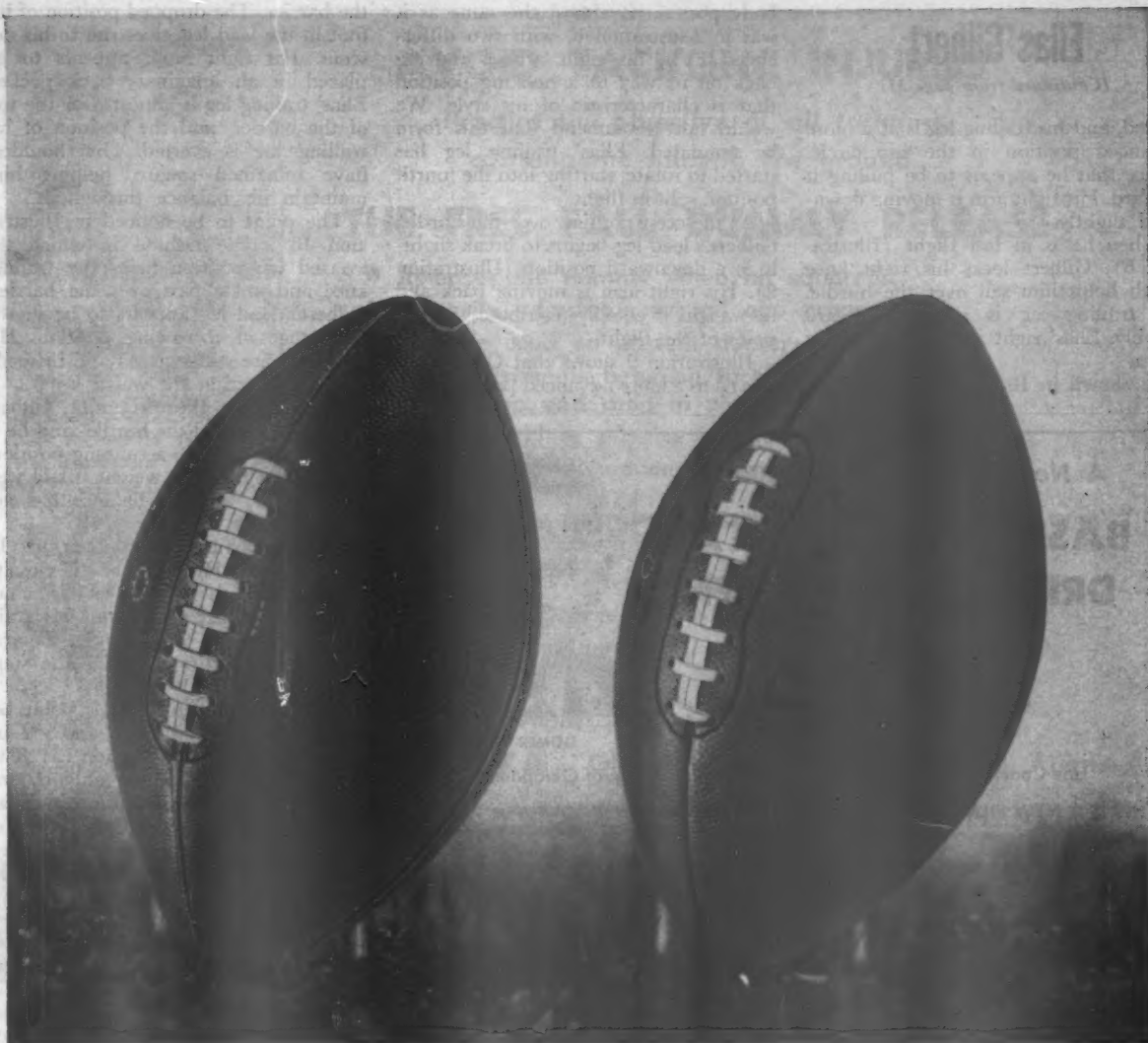
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Elias Gilbert

(Continued from page 25)

tended, and his trailing leg is at a more advanced position in the hip circle. Notice that he appears to be pulling it forward. His right arm is moving downward slightly.

When he is in full flight (Illustration 6), Gilbert locks his right knee which helps him sail over the hurdle. His trailing leg is moving forward steadily. Elias' right arm is still moving down.

As shown in Illustration 7, Gilbert's

body position is almost the same as it was in Illustration 6, with two differences. First, his right arm is moving back on its way to a hooking position that is characteristic of his style. We would not recommend that this form be emulated. Elias' trailing leg has started to rotate, starting into the fourth position split in flight.

At the crest position over the hurdle, Gilbert's lead leg begins to break slightly in a downward position (Illustration 8). His right arm is moving back and his weight is equally distributed at this point of the flight.

Illustration 9 shows that Gilbert has moved to a more advanced position over

the barrier. The dropped position of his foot in the lead leg gives rise to his descent. His right hand appears to be placed in an imaginary back pocket. Elias' trailing leg is almost over the top of the barrier, and the position of his trailing toe is everted. His shoulders have remained square, helping him maintain his balance throughout.

The point to be noticed in Illustration 10 is the fashion in which the everted toe position helps the trailing knee and ankle pass over the barrier. Gilbert's lead leg appears to be in the first stage of a pawing position. His shoulders are still squared and his body remains flexed at the waist.

As shown in Illustration 11, Gilbert has finally cleared the hurdle, and he is preparing to land in a running position. Notice that his body weight is still well forward, and his balance has not changed.

Elias is starting to straighten up (Illustration 12). His arms are still close to his body, which tells us he has maintained his balance throughout. His trailing leg has gone to the under-the-arm position, preparing itself for the step-down action.

Balance is present at this point because Gilbert's head, knee, and toe are still in alignment (Illustration 13). This position can be attained only by top performers. Muscle definition in Elias' back is smooth, showing an absence of tension. The pawing action will be terminated as soon as the lead leg strikes the ground.

Gilbert is shown on the ground in Illustration 14. His trailing leg has progressed to the step-down position where it is no longer under his left arm. He is still on his toe. This position is indicative of a ball, toe rolling action which helps him resume the rolling, pushing position while moving forward toward the next barrier.

As he starts off to the next barrier (Illustration 15), Gilbert is the picture of balance, and the pushing action can be seen clearly. Notice the downward driving position of his trailing leg.

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From Here and There

(Continued from page 4)

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Base-Running Strategy

(Continued from page 10)

ball game, and undue aggressiveness in trying to score one run might break up the possibility for a big inning.

3. Look for the signal.

A. *Simple signals.* All coaches realize the importance of signals which can be received and understood easily. Signals that are easily understood are important to the individual running the bases, because a player has more confidence when he knows he is doing exactly what the coach wants him to do. A player who executes the hit-and-run when he is not really sure he is supposed to do so, often will not do the job as well as he should. Simple signals that are easily understood give the base-runner confidence that should reflect in his performance.

B. *Repeat signal.* If a signal is misunderstood, or the batter or base-runner is not sure a signal was given, the player should flash a repeat signal, which is a request for the coach to give the signal again. This signal places a burden on the coach, but it is important that the players be sure they have the correct signal and know what they are supposed to do.

C. *After a base on balls.* After a bat-

ter has received a base on balls, he should look for a signal while he is on his way to first base if the offensive team is seated in the first base dugout. If the third base dugout is being used, the runner should look for a signal as soon as he reaches the base and is able to turn around.

D. *After a base hit.* After a base hit, whether it was a single, double or triple, the base-runner should look for a signal immediately upon returning to the base after rounding it, or on regaining his feet after a slide.

E. *After each pitch.* After each pitch, the base-runner should look for a signal as soon as he returns to the base, while the catcher is returning the ball to the pitcher.

F. *Squeeze signal.* After getting the squeeze signal from the coach, the batter should relay it to the base-runner on third base and get an answer from him; otherwise, the play is not on. The signal from the batter to the base-runner can be a different one from the one the coach uses, but both men involved must have the signal and know the play that is to be attempted.

G. *Hiding intentions.* In getting a

signal from the coach, the base-runner should hide any reception of a signal and also his intentions. Many players stare at the coach for a signal, and once it is received tip off the opposing team that a signal has been received. Some players, upon receiving a steal signal, grab some dirt in both hands, kick the bag, look at second base, nod their heads unconsciously or look away too quickly. Baseball players must be good actors in order to be able to mask their intentions.

5. Individual strategy in base-running situations.

A. *Steal.* Many players think once the steal signal is given, all strategy and thinking for the play has already been done by the coach, and all that remains for them to do is steal the base. This, of course, is not true. A steal signal is not a command to steal on the next pitch, but permission to steal if the runner thinks he can be successful. This concept makes it necessary for the base-runner to use some strategy and do some thinking of his own. The runner should take his lead with the intention of stealing the base, but if anything happens to cause him to think his chances of stealing the base successfully have been cut down considerably, he should not make the attempt. He should not attempt a steal in the fol-

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lowing situations:

1. The pitcher makes his delivery to the plate before the base-runner is ready to break.
2. The runner is leaning in the wrong direction at the time of the pitch.
3. The runner slips or stumbles as he breaks away from the base.
4. The runner feels the defense is anticipating the steal.
5. The runner does not get a good start on the pitch.

If the runner does not make the attempt, he should look back to the coach before the next pitch for a possible repeat of the signal.

B. Double steal. Whereas on a straight steal the runner has the option to go or not, in the double steal with runners on first and third, the runner on third is more or less obligated to steal unless he gets a very bad jump on the pitcher. With any sort of break from first the attempt should be made. As the runner reaches a point near halfway to second base, he should glance back over his left shoulder without breaking stride to see what sort of defensive play the catcher is making.

1. If the catcher is not throwing through to second base, the runner should go into the bag standing up.

2. If the throw is made to second base, but the runner feels he can beat the throw, he should slide into the base.

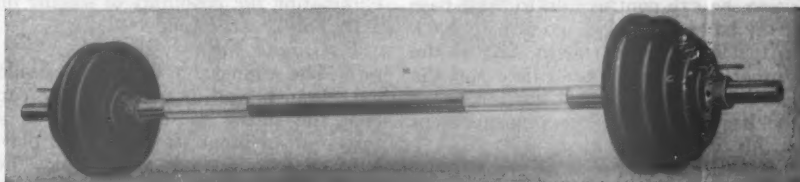
3. If the throw is made to second base and has the runner defeated, he should stop and get in a run-down. In a double steal with runners on first and second, second and third, or first, second, and third, the lead runner makes the attempt if he can get a good lead and a good jump on the pitcher. The rear runner must watch the lead runner for the first few steps so he can follow his example. If the lead runner does not go, the rear runner must also hold up.

C. Hit-and-run. In the hit-and-run situation, the runner is more obligated than ever to attempt the play, since the hitter will be swinging at the pitch. He should make every effort to get a good jump on the pitcher, and if necessary, may shorten his lead slightly to be sure he is leaning the right way when the pitch is made. The runner should not hold up unless he gets a very poor jump on the pitch. As the runner nears the halfway point to second base, he should glance over his left shoulder to see if the ball has been hit up in the air. If it has, then he must get back to first. If he continues around the bag at second, the runner should pick up the third base coach immediately for some sign in case he cannot see the play himself. Should a long fly be caught after the runner has passed second base, he must retouch the bag on his way back to first base.

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D. Run and hit. The same strategy that is used for the steal is used in this situation, except the runner should glance back over his shoulder to see if the ball has been hit by the batter.

E. Fly balls — (less than two out).

1. When a runner is on first base and a long fly ball is hit with less than two out, he should go as far toward second base as possible and still be able to beat the throw back to first base if the ball is caught. If the ball is hit to right or right center field, the runner will not be able to go too far, because the throw to first base would not be a very long one. However, if the ball is hit to left or left center field, the runner can often go all the way to second base safely and then wait to see if the ball will be caught. In this case, the runner should place his right foot on the base, his left foot toward third base, and wait to see if the catch will be made. From this position, he can continue on to third base if the ball is missed, or go directly back to first base if it is caught. Should the runner go beyond second base and the catch is made, he would have to touch the bag again and lose precious steps on his way back to first.

2. When a runner is on second base with no one out, he should make every effort to tag up and advance to third base, so he can score on a fly ball or an

infield out. With one out, the runner should be more conservative and attempt to advance only when he has a very good chance of reaching third base safely. With two out after the catch is made, the added advantage of being on third is not worth the risk of being thrown out.

3. When a runner is on third base, he should tag up on all fly balls and line drives if there are less than two out. A good rule to follow might be, *If the ball is in the air, tag up.* With no one out, the runner should not attempt to score on a fly ball unless he has an excellent chance of being successful, because after the catch is made there will be only one out and still a good chance to score on a fly ball or an infield out. However, with one man out, the runner on third should take more of a chance trying to score on a fly ball, because after the catch there will be two out, eliminating the possibility of scoring on a fly ball or an infield out.

F. Ground balls.

1. The runner on first base should get as much lead as possible so he can beat the throw to second base on a force-out, or break up the double play. With runners on first and second, the first base coach should watch the first baseman to allow the runner to get an even bigger lead as the defensive man

plays behind the runner. In this situation, a big lead is often valuable when a ground ball is hit which may result in a force-out or a double play. An exception would be when the winning run is on second or third base late in the game. Then the runner on first should be more cautious to avoid being picked off base with an unimportant run, while the winning run is in scoring position.

2. The runner on second base should take his lead with his eyes on the pitcher, while the third base coach watches the shortstop and the second baseman. On ground balls hit to the runner's left, the runner should advance to third base, watching the third base coach for a sign to round the bag in case the ball is missed in the infield. However, on a ground ball to the runner's right, he must hold up until the ball has passed the third baseman and the shortstop before advancing to third. The runner must also hold up with two men out in this same situation to avoid being tagged out by the third baseman who is fielding the ball. The runner should advance on a ground ball hit to his right only when the ball is hit slowly and will be fielded well in on the grass.

3. The runner on third base should review the game situation with the third base coach to be certain he understands the type of strategy needed under the



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circumstances. Then he should notice the position of the infielders to see which ones are playing in close and which ones are playing deep. The lead should be a walking lead with the runner's weight toward home plate. It is much better to take a shorter lead with the runner's weight leaning toward home than to take a long run toward the plate and be scampering back toward third when the ball passes the hitter.

With no one out, the runner should make the ground ball go through the infield before trying to score, unless the infielders are playing very deep and the ball is hit slowly. When no one is out, the runner should not try to score on a ground ball unless he knows for certain he can make it.

When there is one out, the runner should get a good lead and attempt to score on any slow-hit ground ball that is not directly at the pitcher. As he nears home plate, the runner should try to see if the throw has him defeated. If it has, he must stop and get in a run-down, trying to give the batter time enough to get to second base. If a ground ball is hit hard to an infielder playing deep, the runner should try to score if he has average speed.

With runners on first and third and less than two out, the runner on third must break for home on all hard-hit ground balls to avert the double play possibility. If the ball is not hit hard, and the chances of making the double play are not good, the runner should hold at third unless he thinks he can score.

Aggressive, hustling, heads-up base-runners are not necessarily the speediest players on the team, but they are boys who are alert, know base-running strategy, and apply it on the base paths. A sound knowledge of base-running strategy, coupled with correct execution of base-running skills, will pay off in more runs scored and more games won.

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Arm Action in the 440

By TOM ECKER

Coach, Kentuckiana Cinder Club, Louisville, Kentucky

ONE of the most important physical functions of a quarter-miler, and often the most neglected, is arm action. Many coaches tend to undervalue arm action in the 440 when a boy can become a much improved runner through the proper use of his arms.

Because so much energy is used in so short a time, the 440 has long been regarded as the most grueling event in track and field. A quarter-miler who expends enough energy to be in a good position at the 330 mark often does not have the needed drive to finish with a kick that is comparable to the first three-quarters of his race. For this reason we began experimenting with ways of maintaining good quarter-mile speed throughout the 440 through use of the arms.

Our 440 men use three distinct styles of arm action every time they run a race. From the time the race starts until they reach their quarter-mile pace, they use their arms like sprinters. Then they change to a style that we call form running, which is maintained throughout the greater part of the race. Finally, they finish the race by greatly exaggerating the swing of their arms in the final drive to the finish line.

The Start

At the sound of the gun, the quarter-miler digs out of the blocks similar to a sprinter for the first 30 yards. This opening sprint builds up his energy so

Tom Ecker graduated from the University of Iowa where he competed in jumps, sprints, and middle distances. He still holds the Iowa field house 440 record. Ecker has coached high school track and cross-country, and is currently head coach of the Kentuckiana Cinder Club, one of the growing number of track clubs where boys may continue their interest in track and field.

that he can maintain near top speed throughout the race.

Many coaches are rather reluctant about having their 440 men come out of the blocks at top speed, because they feel that a boy will use some of the physical strength needed later in the race. Actually, we have found that nervous energy which is stored up for the start carries the runner through the opening drive with little if any loss of physical strength.

Form Running

After 30 yards, the runner changes to what we call form running. This type of running sustains the speed that the runner has built up coming out of the blocks without using nearly as much energy. The steps are short and rapid — about 22 per 50 yards. A runner's arms are not just swung, but are bounced with each step so that his upper arms and shoulders are actually massaged and kept loose.

When running the curves, the form remains the same except that the action



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of the right arm and leg is a bit more pronounced. The right arm is swung across the chest and toward the pole, while the right leg is driving a little harder than the left. This motion helps the runner keep his balance while rounding the curves.

The Finish

When the runner begins to tire because of the fast pace he has set for himself, he begins to exaggerate his arm action by swinging his fists up to a point in front of his eyes, very much as though he were hitting someone in the jaw. This action prevents his arms and shoulders from tying up in the final run for the tape. While exaggerating the arm swing, he also lifts his knees similar to a sprinter, picking them up and putting them down as rapidly as he is able. To make sure he never slows down at the tape, he continues his drive to a point five yards past the finish line.

Butch Kincaid, one of our sprinters, wanted to be a quarter-miler, but was just not able to run fast enough at that distance. After his first year, Kincaid's best time for the 440 was 53.7. We worked with him for just a week, showing him the arm action methods that are explained. During the next season he ran 50.2, an improvement of three and a half full seconds over his previous best. High school coaches in this area who are teaching the importance of arm action are getting similar results.

We began experimenting with different styles of arm action in an attempt to discover ways of maintaining good quarter-mile speed throughout the 440. The results have shown us just how important his arms are to the quarter-miler. The legs may be the wheels that get the runner to the finish line, but the arms are largely responsible for making those wheels churn.

Hayes Jones

(Continued from page 23)

come to a more erect running stride. Of course, this correction is made within the first three steps. We used the latter method for Jones. He still hits that first hurdle if he forgets to come erect. He will also ride down more hurdles than a tall man due to his lack of height and his quick snap-down. Jones uses the customary eight strides to the first hurdle.

Many coaches are concerned with the style of arm action a hurdler uses. Some favor the two-arm forward, while others favor the single-arm action. If we were to start a beginning hurdler on form, the two-arm forward position would be emphasized, mainly because it helps to retain the body lean as the

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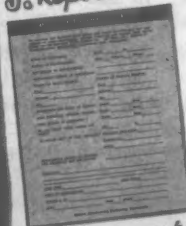
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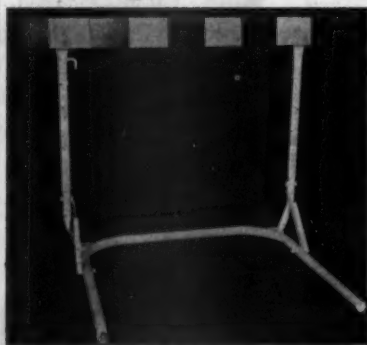
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hurdle is taken, and aids in keeping the shoulders parallel to the hurdle. Porter of Northwestern used this style, along with many other champions. The main point is that a hurdler uses his arms for balance and unless a good man is doing something radically wrong with his arms we do not believe in changing his style.

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Can Kelly Slide?

(Continued from page 16)

Both feet should be plantar flexed and the instep of the right foot should rest against the nearer edge of the glove, because the tag of the base will eventually be made with this portion of the foot.

After the players have developed the feel of this position, they can be moved back two steps from the glove. At this point they should take a preliminary step with the left foot, and then the right foot should be placed up against the glove and the preceding position assumed once again.

Then the squad should be moved back three steps from the glove so that the routine is preceded by a step with the right foot, a step with the left, a step with the right, and then the slide. By now some momentum can be created so that a true sliding action can be obtained along the surface of the floor. Sufficient distance must be allowed between the last step with the right foot and the glove to allow for the slide. The players should be instructed to stay low as they step forward preparatory to the slide so they do not jar against the floor, and in order to get a better sliding action. Players should be sure their legs remain bent throughout the slide and are not thrust forward at the last moment dropping them onto their hips. This movement destroys the purpose of the hook slide

and can also cause a hip bruise.

When this much of the slide can be performed with competence, then the squad can execute the same routine with both hands held high. Without the use of the hand to bear his body weight, the player's body must be brought down gradually into the sliding position by bending his knees. The outside of the left calf will bear the weight of his body. Some players drop the knee to the floor rather than the calf of the leg, but this fault can be corrected by holding the knee slightly higher.

After several trials have been conducted in this fashion, the squad can be moved back to an indefinite and unmeasured distance from their gloves and told to slide in and gauge their slide on their approach. Trial and error will determine the distance from the base that the slide must be started.

On moving out-of-doors only two adjustments must be made. Because of the greater resistance provided by the dirt surface, the slide must be started a little bit nearer the base. Also, because of the resistance from the dirt surface, the weight of the player's body must be held back a bit. Thus his hip helps his lower leg bear the weight, or he will

John LaPlace played at CCNY, and following the war played three years of minor league ball in the Phillies and White Sox farm systems. He served one year as freshman coach at his alma mater before being elevated to the top spot. This is LaPlace's seventh year as varsity coach.

not get a slide at all. A few trials will enable a player to adjust perfectly.

In teaching the slide, the coach must emphasize the following points:

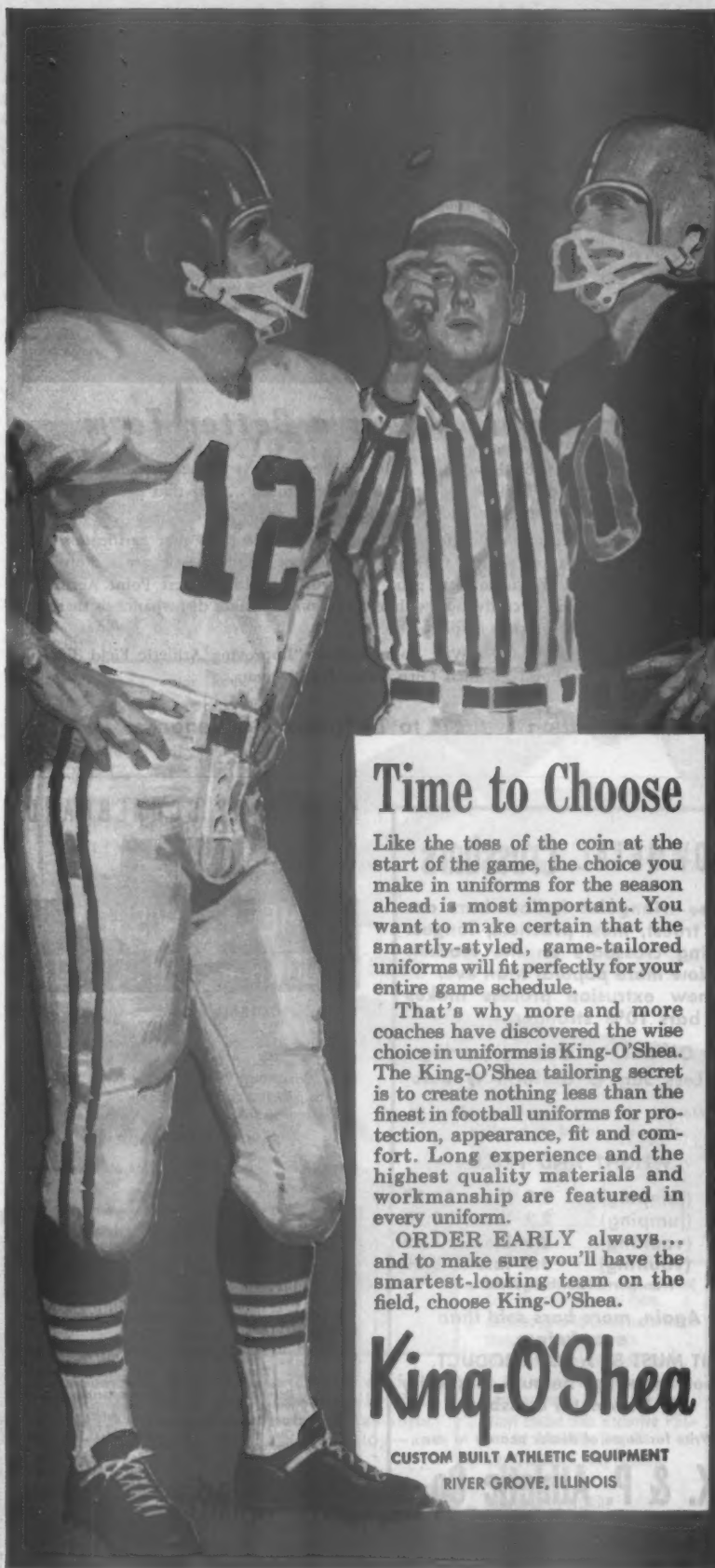
1. The player must prepare himself for the slide by lowering his body as he approaches the base. This movement reduces jarring and helps the player get a better slide.

2. The take-off foot for a slide is the right foot if the slide is to the left and the left foot if the slide is to the right. Thus a player is able to place the leg which bears his weight on the ground properly.

3. Both feet must be turned up and away from the ground at the ankle joint so that the spikes do not catch in the ground.

4. Both hands must be held off the ground so that the hands and wrists are not scraped or sprained by contact with the ground and are not stepped on by the baseman.

5. It is the instep of the take-off foot that eventually touches the base and the tag should be made at the left-hand corner of the bag when a player is sliding to the left and the right-hand



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corner when he is sliding to the right. Thus the base-runner is kept as far as possible from the baseman.

6. The last instruction given is that once a player begins a slide he should not change his mind and stop. If he is in doubt, he should slide. Hesitation is the worst error, and the most costly.

Preventive Conditioning

(Continued from page 28)

they are representative of a large proportion of the bodily strength. In order that the exercise technique have the relative value as applied in progressive resistive exercise, some of the following points should be considered: 1. The muscle groups have to be placed under progressive stress. 2. The exercise should have some semblance of individual prescription. 3. The exercise should be resistive enough to work in the strength power areas of development as well as consider endurance qualities. 4. The exercise should be able to develop the desired qualities of strength and power at a rapid rate so the protective qualities may be developed early in or previous to the competitive season.

The problem may be summed up by emphasizing strong musculature for injury prevention in that the joint is more firmly bound together and lateral movement is reduced. Good musculature tone will tend to lessen injury when a player, who is relaxed, is hit on the field.

Various methods have been used to reproduce the fundamental ideas of progressive resistive exercise which necessitates the systematic progressive periodic increasing of the weight load against which the musculature has to work. The weight load and action might be: 1. The exertion of the muscular contractile action against a static object. 2. Movement against spring scale

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or other spring resistance. 3. Movement against the forceful resistance of another person. 4. Movement against a person's own body weight with the use of varying angles of action to increase muscular resistance load.

In consideration of the latter concept, the balance of this discussion will be devoted to the technique, the apparatus, and other administrative items to demonstrate how the bench technique of exercise meets the needs as listed previously.

The techniques were devised in 1945 and used as part of the total reconditioning of post-operative knee conditions while we were in military service rehabilitation work. Reconditioning results obtained seemed to meet the developmental needs of the large number of patients participating in the specific program. From 1946 until 1952 the technique was continued with other areas of progressive resistive exercises. Early in 1954 this technique was experimentally compared with another body resistive exercise for the comparative ability to increase strength development of the thigh supporting musculature of the knee. Strength increases were revealing in light of the actual measured minutes of exercise done by the test group during the one month exercise period. The bench technique gave a higher percentage of total strength gain of the muscular groups tested: quadriceps at an angle of maximum strength, quadriceps at terminal extension for vastus medialis influence, and hamstrings at an angle of maximum strength. The subjects used in the experiment were physical education major students; none were varsity football players.

An additional comparison was made of the average of 100 college and university football players measured the previous fall during early season practice by using the same testing period. Although the test groups were much below the average football player's strength level at the beginning of the testing period, at the end of one month the experimental group's muscular strength score, and assumed muscular protective qualities, exceeded the football players in average measurements. Evidence shown in this study indicated the future values of the techniques, as a strength-building exercise method as well as a protective device, and can be recommended on the basis of the experimental results obtained.

Due to the specific muscular action involved in the exercise, both the quadriceps and hamstrings are brought into contraction in the single movement. In the experimental work, the hamstring muscular strength gains were greater than the terminal extension measures of the vastus medialis.

Before giving suggestions for carrying out each day's program it is important that some fundamental facts be considered in relation to exercise, strength loss following exercise, recovery from strength loss, and the element of increased injury potential during periods immediately following the conditioning program.

Original experimental research recently completed at Springfield College, dealing with the problem of muscular strength loss following vigorous physical activity to fatigue, indicates the following:

1. During the first two weeks of ex-

ercise to fatigue, the unconditioned subjects showed strength loss immediately (30 seconds) following exercise from 31 to 33 per cent, and 40½ minutes later the recovery was still 19 to 25 per cent below the original starting strength level. The indication is that the practice of starting contact drill immediately following the conditioning program increases the potential of injury due to the loss of the basic strength factor which is considered as essentially a protective factor to injury potential. This thinking is further substantiated in the National Athletic Trainers Football Injury Survey of 1952 which re-

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ported that there was a high incidence of injury early in the season and it is assumed that knee injury was high in this incidence. This may be due to the fact that the player is not in top physical condition but is working hard to obtain a team position. It could be concluded that a rest period or non-contact period of drill, immediately following conditioning work, would be considered as acceptable procedure in early season practice, thus reducing the injury incidence.

2. During the three weeks of exercise to fatigue with the conditioned subjects, the strength loss immediately following exercise (30 seconds) was from 29 to 32 per cent, and 37½ minutes later was reduced to 6 to 9 per cent below the original starting strength level. It should be noticed that the conditioned subjects started at a higher strength level before the experiments.

The indication is that the practice of starting contact drills immediately following the conditioning program is still a hazardous procedure but the inactive period before contact drill could be reduced as the condition of muscular strength increases. The data shows that the conditioned subjects regained strength recovery from 89 to 92 per cent in 12½ minutes, thus giving a higher level of strength protection for

earlier contact drills following the conditioning program. It may be concluded that this information indicates the value of conditioning for more rapid recovery from strength loss due to exhaustive physical activity, and the higher level of strength developed as a result of pre-conditioning will reduce injury potential. Due to these facts it is suggested that the application of the bench technique be followed by a non-contact period of the practice session or the exercise program be carried out well in advance of the practice session. The application of this technique is best accomplished in advance of the starting of the practice sessions because then the player will have the developed strength protection and not be building it during the time it is needed. Work done during the spring or summer will give a player the advantage. Evidence shows that strength levels of increase of the thigh musculature have been maintained over the period of a year when the person remains in some form of active activity.

The step-by-step execution of one complete exercise may be followed exactly as shown in the illustrations. The time for one complete execution of movement takes four seconds. In the complete action, both concentric and eccentric muscle actions are experi-

enced and maximum effort is obtained for their specific work. During the first two days 10 to 15 repetitions are enough to teach the student the cadence, etc.

It is recommended that the placement of the bench, as indicated in the illustrations, be followed exactly for maximum results. If there is too great a distance, the leverage factor is changed and the effectiveness of the body weight against which the musculature work is reduced. In order to increase the work load during the exercise period, two additions to the technique may be made after the player has adjusted to the technique: 1. Allow the body to lean beyond the perpendicular in both phases of movement. 2. Strap additional weights across the subject's back to increase body weight load.

After the exercise cadence has been learned, the player may progressively build up the number of repetitions of exercise, as well as the addition of extra weight, to increase weight resistance against the working musculature.

The exercise program consists of one period per day, five to ten minutes in length and four to five days per week. Each exercise period should consist of two equal exercise sessions with a two to three minute rest period between sets.

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100-Yd. Dash	9.3	Evanston, Ill.	5/14/53
100-Yd. Dash	9.3	Fresno, Calif.	5/12/56
100-Yd. Dash	9.3	Durham, N. C.	5/ 5/56
100-Yd. Dash	9.3	Texas Relays	4/ 9/57
100-Yd. Dash	9.4	Ahlton, Tex.	4/27/57
220-Yd. Dash	20.0	Ranger, Calif.	5/ 9/56
220-Yd. Dash	20.2	Los Angeles	5/ 7/49
440-Yd. Run	46.2	Salt Lake City	9/21/47
440-Yd. Run	46.0	Berkley, Calif.	9/ 3/48
440-Yd. Run	45.8	Modesto, Calif.	3/28/56
120-Yd. H.H.	15.3	Fresno, Calif.	5/15/50
220-Yd. L.H.	22.2	Durham, N. C.	5/ 5/56
220-Yd. L.H.	22.3	Salt Lake City	9/21/47
400-Meter H.	49.5	Los Angeles	9/29/56
110-Meter H.	15.4	Bakersfield, Calif.	8/22/50
500-Yd. Run	1:04.6	L. A. Relays	5/24/57
2-M Relay	7:22.7	L. A. Relays	5/24/57
800-Relay	1:22.7	Texas Relays	4/ 4/57
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New Discus Thrower

(Continued from page 18)

it is the shoulders that lead and pull the hand, not the hand that pulls the shoulders. The discus must be pulled, not pushed, by the big pectoral and shoulder muscles. Telling the boy to push forward with his chest as he uncoils may help him understand this point.

At the second count the thrower must uncoil, turning his body, hips, and shoulders vigorously to the left and pulling his arm, which has straightened, around to the front and up. As he executes these movements, he should straighten his back and push hard with his rear or right leg. When the boy has mastered this motion, he can start to execute the two movements together as the coach counts one-two. Practice can be conducted in groups without a discus or singly with a discus which has been provided with a hand strap to prevent the boy from throwing. When the movements of the standing throw have been mastered, then and only then should the thrower be allowed to throw.

At this stage rhythm is important, and the practice of coiling and uncoiling should be done to a rhythmic count. Then the coach should look for the following faults:

1. If the thrower's arm is leading his shoulder in the throw, then his hand must be pulled rather than pushed by his shoulders and chest.

2. When a thrower jumps off the ground at the end of the throw, he should be instructed to keep both feet on the ground. A great deal of the force behind the discus is supplied by the push the legs give against the ground.

3. Not coiling down is another common fault. Bending should be done at the knees, hips, and waist.

4. If the thrower's hand is not horizontal throughout the movement, he should learn that throughout the throw the discus must be horizontal; therefore, his hand must be horizontal. Upward momentum of the object is supplied by the thrower's arm. The hand stabilizes the discus and presents it into the air in the position from which the most glide will result. An upturned discus will catch the wind and create air resistance, thus cutting down the distance it will travel. A more horizontal discus will cut the air and travel smoothly. The discus should be held comfortably with the fingers spread, but not stretched apart, and the edge of the discus should rest against the outer joints of the thrower's fingers. It should be released

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from the index finger.

5. Allowing the arm to swing forward in a horizontal plane is another error. The arm is the force which supplies the upward flight of the discus. It must come from a position about belt high to one above the shoulder. The discus will fly in a continuation of the angle which the arm describes when it is coming forward. However, the arm, not the hand, sends the discus up; the discus itself must be horizontal.

These five faults are those which occur most frequently. The coach should correct them at this stage and continue to correct them as he goes along.

In summary, the steps in the standing throw, with or without a discus are: 1. Stand facing the direction of throw, right foot (for a right-handed thrower) back, weight forward, hands and discus resting on the chest. 2. Twist or coil to the right, bending the knees, hips, and waist. The thrower's weight should be on his rear foot, his shoulders and arms should be as far around as possible, his arm straight, the discus held horizontally, and his eyes in the direction of the throw. 3. Uncoil to the left bringing the weight forward by a vigorous push with the rear leg. His arm should swing around and up pulled by the shoulder. The thrower's chest should push forward, and his hand

should be horizontal. 4. Any reversal or foot switch is the result of momentum, not the cause of it. The thrower should stay on the ground during the throw.

Have the boys practice these movements over and over without the discus and with it. Once they master the standing throw with the implement, it is not necessary to practice without it again. Then the emphasis should be placed on relaxation and rhythm. At first throwing should be done to the coach's count of *one, two, or coil, throw*. Keep the beginners at this phase of the throw until they can do it proficiently for long periods without making too many errors or becoming fatigued. Then start to teach them the turn.

Again, have the new boys watch some of the more experienced throwers. Twenty minutes of watching will show them what it is they are trying to do. Loop films and movies should be used. In fact, any visual aids are invaluable at this stage, providing the boy watches acceptable performances. It is not wise to expose a new boy to extremes in style even though these may produce record throws. Let him watch the style he is learning. For example, there has never been a greater shot putter than Parry O'Brien, but his style can only be learned after the fundamentals of the

put are learned. Watching O'Brien's style would only confuse many beginners.

While learning the turn, the boys must keep in mind the fact that all points learned for the standing throw are applicable to the throw with the turn. All they are doing is adding to what they have learned previously. Place the boy in the circle facing the direction of the throw. His right foot will be on a center line which may be drawn through the circle in the direction of the throw. His left foot should be to the left of this line spread about shoulder width. Both heels should be close to the rim of the circle. The thrower faces in the direction of the throw, selecting a target with his eyes. Having a target tends to prevent wild throws and gives the boy an idea of the direction in which he must travel. The coach should explain to him that he must direct all his effort during the turn along the line stretching from where he stands at the rear of the circle to the point he hopes the discus will land. Of course, this line is a diameter of the circle. It is the line on which his right foot rests prior to starting the throw.

The first moves the boy makes should be simple rhythmic turns. He should twist his body and arms around as far as he can without moving his feet. His

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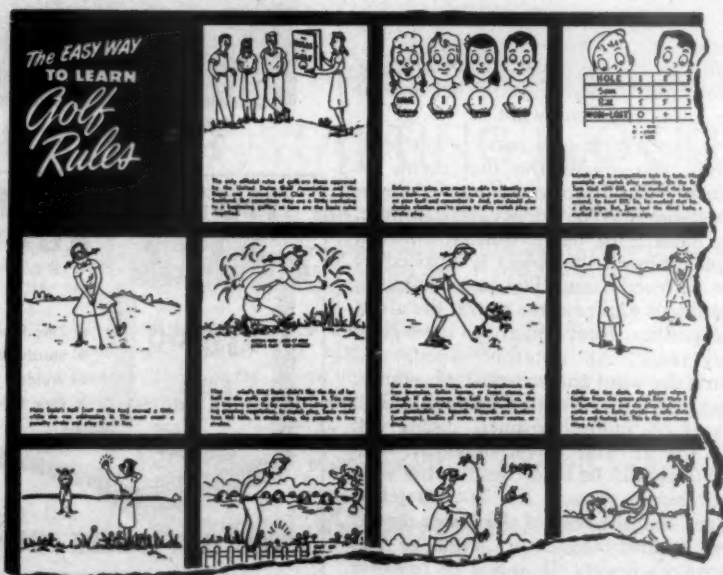
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knees should be bent slightly, his hip and shoulders twisted, and his head and eyes turned. His body is aided by the weight of the discus which is brought from the chest and turned at arm's length and about waist high. The movement ends as the boy untwists and resumes his original position. This movement is the same as the standing throw, except that the discus is retained and brought back to the chest. The purpose of this preliminary swing is to build up momentum before starting the turn, and to start the athlete out with a set pattern in his event. This pattern will contribute to the eventual automation or overlearning the movement, and allow the thrower to feel his way through the discus throw rather than think his way through. These preliminary swings or twists should be rhythmic and a standard number of them, usually two, should be used. The swings should be practiced in rhythm.

The next step in learning the turn is simply to move the left foot and turn the body. As the discus arm swings to the rear and the thrower's body twists to the right on the third preliminary swing, his left foot should be moved to a position on the right side of the center line, as far to the right as it was to the left at the start of the movement. It will be necessary for the thrower to pivot on his right foot. The toes of his left foot will now be toward the rim of the circle. Now the boy is at the rear end of what might have been his third preliminary swing had he not moved his left foot.

In these learning stages, the thrower's head and eyes should be directed toward his target out on the field. However, his body and legs have turned, and are facing the rear of the circle. The boy's weight is still on his right foot, his knees are bent, and his hips are flexed. He is momentarily poised at the rear of the circle ready to begin his forward movement. Here he is coiled or cocked ready to shoot forward. As he becomes more adept and more certain with the discus, he may turn his head and eyes to the rear of the circle, permitting a more complete action. However, in the beginning, for safety's sake, have him focus on the field. Now as he moves forward, he should transfer his weight to his left foot and begin his turn, trying to keep his shoulders and trunk ahead of his feet and leaning along the center line. The arm with the discus must trail the shoulder throughout the turn.

The turn simply consists of pivoting to the left on the left foot, placing the right foot approximately in the center of the circle, pivoting on that foot, and planting the left foot, as a brace, near the front edge of the circle to the left of the center line. The thrower will finish in the position he has practiced

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during the standing throw. The turn itself is not difficult; it is the control of the body weight during the pivots which is hard for beginners to learn.

As the thrower turns from the rear position, he should place his weight on his left foot and plant his right foot on the center line or as close to it as is comfortable. The coach should not worry too much about the placement of the right foot. The boy will put it down when he must in order to prevent him from falling. Correct body lean and forward momentum will insure correct foot placement.

When the right foot is placed, the thrower's weight should be shifted again and his body pivoted on his right foot. His left foot should be planted at the front of the circle to the left of the center line, and it takes the weight as the discus comes forward. Any further transfer of weight or foot shift is the result of the momentum of the throw.

It is not important that the thrower immediately master the step-by-step sequence of the throw or that he place his feet exactly in the marked spots as he turns. It is important for him to develop rhythm, be capable of building up momentum as he turns, and be on balance when he comes out of the turn. There is only one way for the boy to learn these three essential skills and

that is for him to throw, throw, and throw.

The teaching progression for the discus is somewhat different from that used for other events. Roughly it is as follows:

1. Conditioning phase. The thrower should devote time away from the circle to conditioning his legs, arms, shoulders, back, and abdomen. He must do a great deal of running during this stage.

2. Standing throw phase. The beginner should learn the fundamentals of the discus throw from a stand. Emphasis should be placed on rhythm, balance, and momentum. At this stage he learns that the discus arm and hand trail his body and shoulder as they uncoil. Beginners should do a great deal of throwing, running, and exercises.

3. Turning throw phase. After a very short time spent learning the step-by-step method of turning, the boy should be allowed to practice the complete turn. The coach should correct his mistakes one at a time. Here the important thing is to correct the parts of the movements while the thrower practices the entire throw. Do not spend too much time working him in any particular movement (for example, the turn) without having him work the whole throw. A handy device to save the boy's arm while he does all this throwing is a

discus with a strap across the back. The point of working the new discus throwers in this way is that the three most important aspects of this event can only be acquired by practicing the entire throw. Balance, rhythm, and momentum cannot be learned in pieces, and no discus thrower can succeed without these three. Therefore, while the coach corrects the thrower's faults, he should keep in mind that these basic elements are ultimately what he is working toward.

Keeping in mind that the entire turn is more important than any of its parts, allow the boy to practice awhile without much instruction. When he is able to turn and throw with some degree of skill, then it is time for the coach to move in and start to make corrections. He will probably find that the thrower makes one or more of the following mistakes:

Common Errors

1. *Jumps high in the air as he turns.* Remember momentum is important, and if in pivoting and transferring his weight from one foot to the other the boy is jumping up or hopping, he is losing valuable forward speed. He should almost drag his spikes along the ground as he turns, and all motion and force



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should be directed along the center line. Tell the boy that his motion should be similar to a cyclone twister, and although he is spinning, his body must travel along the diameter of the circle.

2. *Falls or stumbles to the right or left of the circle as he turns.* This is a fault of balance and it can be caused by a number of things. Very often attention to foot placement will correct this error. In spinning, if the boy places his right foot too far to the right or left of the center line, he is going to be off balance to the right or the left when he throws. Then he will fall out of the circle to the side upon release of the discus. If the coach notices that the thrower's foot is on the center line, but he still falls out to the side, the trouble probably will be in placement of the final, or bracing left foot. Have the boy place his left foot farther to the left or right, depending on which way he is off balance. Another cause of this discus throwing error will be that the boy is actually traveling in a diagonal direction. This fault is easily corrected by calling the thrower's attention to the center line, or if he persists, by moving his position at the back of the circle so that although he travels diagonally, he will finish squared with the front and in the proper segment of the circle.

3. *Falls out of the front of the circle as the discus is released.* The boy may be taking steps in his turn which are too large. He is probably bounding across the circle. Check his footprints and if necessary have him shorten his steps. This fault may also be caused by leaning too far forward as the discus comes forward. Faulty placement of the bracing left foot may also result in this error. The thrower's left foot should act as a brake as his throwing arm comes forward, and if used correctly, should prevent this error. If the right foot and the left are too close together, bracing action will suffer.

4. *Throwing from a point too far back in the circle.* Probably this error is due to a lack of forward speed. It is possible for the thrower to be twirling with all his might and still not be traveling across the circle with any speed. More speed across the circle will lengthen the distance covered and bring the boy to the front rim for his throw. Too much speed may place his left bracing foot out of the circle. The coach and the boy must work together to find the optimum speed for the athlete.

5. *Not enough power in the throw.* This problem may be caused by the discus hand leading the shoulder, the turn being too slow, and the turn being too fast. The first of these can be corrected by reminding the athlete that he is to pull the discus, not push it, and by having him keep his chest forward. Explain that his chest and shoulder muscles can

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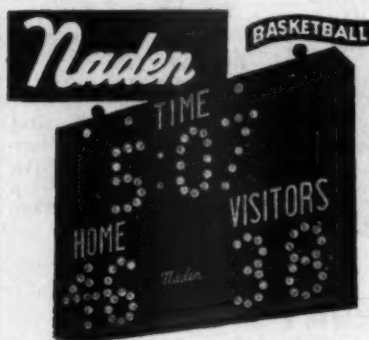
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throw the discus farther than his arm and wrist muscles. If his turn is too slow, the discus hand will fail to build up momentum and the discus itself will be lobbed instead of hurled. Practice makes perfect. If the thrower is turning too rapidly, he is likely to be off balance and will be concentrating on the turn itself, rather than on the throw of the discus. What will result is an uncoordinated fling, often in a surprising direction. Slow the boy down and keep him concentrating on direction and distance. In these last two, work only on the complete throw. In the case of a pushed discus, also work on the standing throw.

These then are the major problems. Undoubtedly, the coach will find others, some simple to solve, others baffling. Remember that many of the problems involved in a complex event like the discus throw are mental and may be solved if the coach is able to convince the boy he can throw the discus. It is possible for a successful high school thrower to come up suddenly with the idea that he cannot hold the discus, and no amount of firm grip or adhesive will help. What can be of assistance is a positive attitude and conviction on the part of the coach. If a boy thinks he cannot hold the discus, but the coach knows he can, later on he will believe the coach. This positive attitude is very important in events such as the discus, pole vault, shot, and others which are complex and involve many intricate movements.

In summary, the coach of high school or beginning college discus throwers should keep in mind the following principles:

1. Discus throwers must be in good physical condition when they start to learn the event.
 2. In teaching the event, most of the coach's attention should be on rhythm, balance, and momentum rather than on intricate matters of form or timing.
 3. As the thrower becomes more proficient, these more intricate matters should be taken up and stressed.
 4. Practice sessions should involve considerable throwing from the circle.
 5. The complete throw rather than the parts should be practiced often. Practice of the parts should be confined to correcting specific errors.
 6. The body of a thrower must move straight across the circle as it turns. This movement can be compared to the action of a cyclone twister.
 7. The discus should be pulled, not pushed.
 8. Safety first.
 9. Maintain a positive approach to your boys' problems. They can be solved.
- The coach should keep these points in mind and work with his boys. Then instead of learners he will soon have discus throwers.

Double Play Techniques

(Continued from page 26)

pivot — for the purpose of teaching. We have set up general rules covering the fundamentals involved in each part.

Feeding the Ball to the Pivot

1. The fielder who is feeding the ball to the pivot man must be accurate with his throw. He should not sacrifice accuracy for speed. Too many double play balls are thrown into the outfield due to a hurried throw. Also, many double plays are lost by off-center throws which force the pivot man off balance. Then he either throws the ball away or has to regain his balance before throwing which uses up valuable time.

2. Aim the throw for the pivot man's letters. A letter-high throw is the easiest to handle because the ball may be transferred to throwing position and snapped to first in the same plane. Thus wasted arm movement is eliminated. Also, the pivot man's best balance in coming across the bag is attained on the letter-high throw.

3. On balls hit near second base, the feeder should make a soft underhand toss to the pivot man with his bare hand (Illustration 1). It is very difficult for a pivot man to handle a hard throw from close range correctly. He must also be able to see the ball as clearly as possible in order to adjust his timing; therefore, the glove hand flip by the feeder should be avoided.

4. Balls hit straight to the shortstop, or to his right, should be wrist flipped underhand with as little arm motion as possible. The player's body should remain crouched in the fielding position and one short step with the left foot should be taken before releasing the ball. It should be emphasized that speed in getting the throw off comes from eliminating excess body and arm motion rather than hurrying the throw.

5. On balls hit straight to the second baseman, or to his left, the second baseman should turn to his right, jump step, and throw sidearm to second base. He should never turn to the left even if it seems more natural. This movement turns his back to the target momentarily, and the chances of a bad throw are increased.

Pivoting

1. The pivot man should approach the bag on the run. About a stride from the bag he should slow down, or hesitate, for better timing of the speed and direction of the throw. As the throw is timed, he should explode across the bag and catch the ball as he tags the base.

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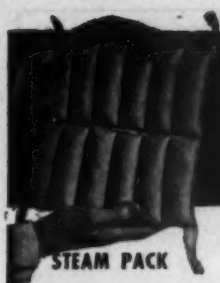
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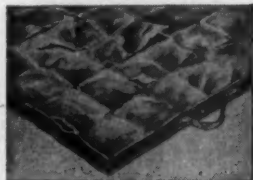
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2. The pivot man should learn to tag the base with either foot. Then he will be better able to shift smoothly for a bad throw from the feeder and better balance will be maintained throughout the pivot.

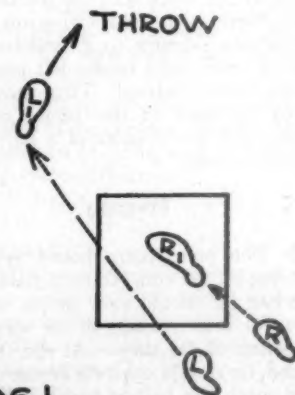
3. In pivoting, the ball must be watched into the pocket of the glove. Many throws are dropped by the pivot man as a result of looking up too quickly. Throws are sometimes delayed by the ball hanging in the webbing of the glove because the pivot man did not see that the ball went into the pocket.

4. The pivot throw should be little more than a wrist snap made from the position in which the ball is caught. Again, the elimination of excess body and arm movement will result in greater speed and accuracy than a hurried throw.

5. Never attempt to throw around, or over, the runner who is coming into the base. Because most young pivot men are hesitant about throwing at the runner, it is much better to teach a pivot which will clear them of the baseline and provide an unobstructed view of first base.

The most complicated phase of the double play is the footwork on the pivot. If the footwork is not sure and accurate, the smoothness and balance necessary on the pivot will be lost and with it the double play.

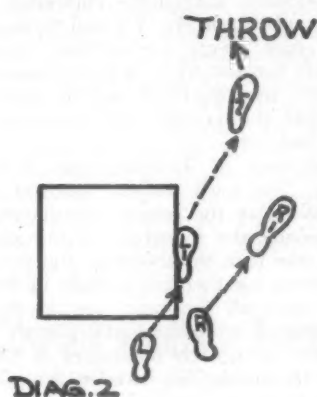
The Shortstop Pivot. On throws over the base, or to the outside, the tag should be made with the right foot on top of the base. As the tag is made, the right foot should push off hard to clear the baseline and a step with the left foot should be made toward first. At the completion of this step, a three-quarters overhand throw should be snapped to first (Diagram 1). We discourage the drag step across the bag because it tends to be unbalancing,



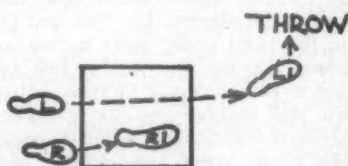
DIAG. 1

Upon graduation from high school, Bill Hatch played two seasons of professional baseball in the Cardinal organization. He attended Southeast Missouri State College during the off-season, graduating in 1951. Hatch received a master's degree from Missouri and then served two years in the army. He coached in Missouri and Illinois high schools before going to Porterville.

slower, and hinders the shortstop's effort to clear the baseline. On throws to the inside of the base, the tag should be made with the left foot on the inside edge of the base. After the tag is made, the right foot should spring inward out of the baseline, and the left foot should be stepped toward first base. A snap throw should be made as the left foot hits the ground (Diagram 2).



The Second Base Pivot. There are many ways for second basemen to make the pivot, but we encourage them to make the same type pivot as the shortstop. On balls thrown over the base, or to the inside, the tag should be made with the right foot on top of the bag. After the tag, the right foot should push off and the left foot should be stepped toward the third baseline. A sidearm snap throw should be made across the body as the left foot hits the ground (Sequence A). The right foot should come around for balance and the left foot should be danced out of the baseline as soon as the ball is released (Diagram 3). If the second baseman has difficulty throwing across his body, we have found that by stepping the left foot at an angle toward first, the throw is made with less effort. On



DIAG. 3

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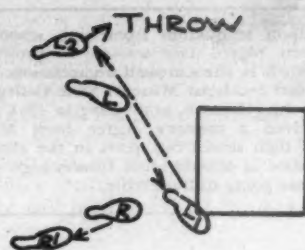
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DIAG. 4

balls thrown to the outside of the base, the second baseman should make the tag with his left foot on the outside back corner of the base (Illustration 1). A spring step back with the right foot clears the baseline and a step with the left foot toward first base followed by the sidearm snap throw completes the pivot (Diagram 4). We feel these second base pivots are superior to any others because there is a minimum of wasted motion, more shifting latitude for bad throws, and good clearance of the baseline.

Methods of Teaching the Double Play. The most difficult part of the double play for young ball players is mastering the footwork on the pivot. We take both the shortstop and second baseman together and explain in detail the footwork for each type of pivot. During this instructional period the reasons why each movement is made and the similarities between the shortstop pivot and second base pivot are emphasized. Then the two players are required to practice their footwork under the supervision of the coach.

The next step in our teaching procedure involves feeding the ball to the pivot man. Again, the fundamentals are thoroughly explained along with the reasoning behind each one. Alternately, the shortstop and second baseman feed each other all types of throws — slowly at first and then faster as the feel of the movement becomes more natural. The player who is being fed the ball practices his footwork on the pivot but no throw to first is made. We start the feeding process with the underhand toss near second, and then move out to the longer throws.

After the players have become somewhat adept at feeding and pivoting, a drill is introduced in which the coach stands on the pitcher's mound and rolls the ball at various speeds and directions to the players. The feed and pivot are practiced under more normal conditions. During this drill a first baseman is placed about halfway between first and second and the pivot man throws to him. At this point we concentrate on the speed and accuracy of the pivot throw. As the drill continues, the first baseman gradually moves back un-

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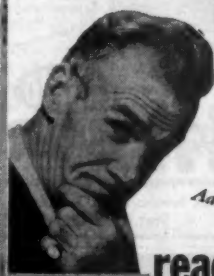
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til he is stationed in his normal position. The shorter throw made by the pivot man at the beginning of this drill is usually accurate and helps build his confidence for the longer throw.

When the fundamentals and timing of the play have been learned to the coach's satisfaction, the process of hitting grounders from home plate is started. Then the final adjustments in timing are made and the entire process of fielding mechanics is added to the double play movements.

The remaining step in the teaching procedure is adding a touch of realism to the play. As the coach hits fungo ground balls, a runner starts from first base and attempts to break up the double play. Another runner leaves from home and tries to beat the relay throw to first base. Under these conditions 50 per cent success in doubling up the runners should be about average.

Because timing between the shortstop and second baseman is so important on the double play, they should work on it continually to maintain sharpness. Aside from the fielding drills, an excellent opportunity for practice occurs whenever the entire team is taking batting practice together. Then every ground ball should be a double play ball.

Cowboy Vaulting Twins

(Continued from page 14)

with Jim Graham.

Aubrey's entire jump depends upon his ferocious take-off and pole bending technique coupled with a very dependable elastic pole and a surplus of muscular explosiveness. This type of vaulter, if fatigued, may easily deteriorate a great deal in his performance because the timing is so critical. For a man who understands the mechanics of this action and can adjust his timing accordingly, the form has great possibilities. This form may prove a boon to shorter or average sized pole vaulters in the future. It is not a form a beginner can learn easily. Dooley makes no attempt to arch over the bar, usually clearing flat out in a fly-away position. He lands facing the bar, since his turn is never as fast as Jim Graham's.

Early in the 1959 season Aubrey tried a new and promising metal pole, but could barely clear 14 feet with this implement. His development in his sophomore year was the result of being advised to use a more flexible pole. Beginning vaulters should remember that the more flexible the pole, the more time the vaulter has to work, but at the critical moment before the bar, the vaulter must work faster than usual. A flexible pole also helps a small man get a good swing and use a higher grip.



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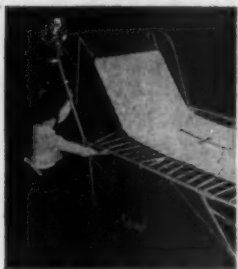
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STORING each player's uniform as a unit eliminates mixups and confusion, and provides for quick and hygienic drying. These uniform hangers have a hot-dipped tinned finish which permanently protects against rust or the corrosive action of perspiration. Each hanger has a securely riveted number plate. The hanger is arranged so that a player's football, basketball or baseball gear will dry quickly and in a sanitary manner. Weight two pounds. American Playground Device Co., Anderson, Ind.

ONE of the problems in teaching mouth-to-mouth rescue breathing has been the unsanitary aspect and personal reluctance of teacher and pupil. The "Breathe Life Trainer" was designed to bridge this gap. It is constructed so that neither person is in contact with the other person's breathing or mouth. The trainer can inflate the simulated lung and hear the victim's exhalation. He can also learn the proper force and frequency of the rescue breath. Medical Supply Co., Rockford, Ill.



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THE newest in pitching machines utilizes the principle of compressed air and either an electric or gasoline compressor may be used. By a slight turn of the ejection tube the machine can be made to throw a curve or straight ball. Change in the speed of the pitch can be regulated by merely turning a thumb-screw. The machine is manually fed which eliminates any danger of a pitch being thrown when it is not expected. Garver Industries, 9450 Sharrott Rd., Poland 14, Ohio.



THIS device, called "The All American Football Trainer," is made of rugged all-steel, triple-welded, triple-spring construction, and has a specially designed contour charging pad to simulate the opponent. Designed for either indoor or outdoor installation, it makes use of the impact-o-meter to measure and register the charge, thus providing incentive for progress in basic fundamental maneuvers. All American Trainer Corp., 1921-A Humphrey Merry Way, Elkins Park 17, Penna.

Aubrey Dooley's senior year holds great promise for the 1960 track season. Either or both of these men, now twenty-two and twenty-five years of age, stand an excellent chance of making the 1960 Olympic team.

In closing, something must be said about the personal relationships of these two fine young athletes. Those of us who have coached and advised these two young men have been privileged indeed. Throughout their careers they have been unstinting in their willingness to help each other in practice or competition. They have made it a special point to help their competitors from other schools even at the height of competition. Good advice given to these athletes at the right time is more important than coaching. Many fine athletes have been over-coached into obscurity because they possessed a minor deviation in form which a zealous coach wished to perfect. We have seen men take off from the wrong foot and make 14 feet, carry the pole in a manner that everyone knows is wrong and go 15 feet, and even go up on the wrong side of the pole and win championships. Graham, the hard luck pole vaulter of all time, and Dooley, the innovator, have given us a whole new perspective on vaulting, which goes to show how little we really know about the science and psychology of sports, even at this late date.

Credit for the sequence pictures appearing on pages 12 and 13 goes to Bob Albright of the "Daily Oklahoman."

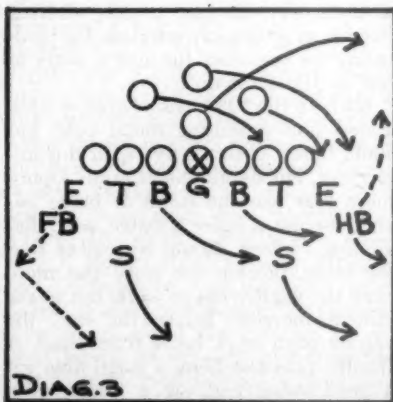
Man On a Rope

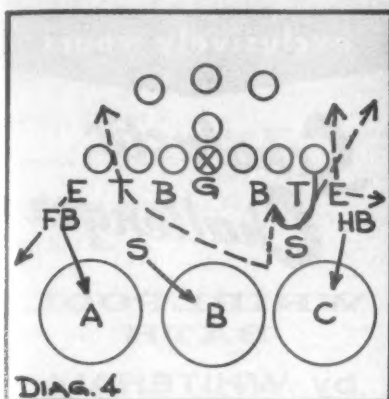
(Continued from page 30)

man. The defenders try to intercept on every play, except on fourth down.

The following assets are important in selecting pass defenders: (1) desire, (2) finesse, (3) pride, and (4) confidence.

Desire. This quality comes from within the boy's own character. It is an intangible substance often referred to as heart.





Finesse. The use of finesse in quick footwork and timing will place the defender in the best possible position to intercept.

Pride. Defenders should pride themselves on doing the best job every minute of every quarter of every game, despite the physical characteristics of height and size of the opponents. Determination to excel and continue to excel is the difference between an average boy and an outstanding lad.

Confidence. A player's personal confidence in himself and in his team's defense will convince him that his team is able to stop all passing threats.

Interior pass defenders are instructed as follows:

1. Always keep the passer in view and get back to the proper zones as quickly as possible.
2. Always sprint to the spot of the pass for a diving interception, a tackle or a block.
3. Never run before intercepting the ball.
4. When intercepting, keep your body behind the ball. Most of the passes in your areas will be of the bullet variety.
5. On a passing down with a long yardage think, *pass*. An interior defender can always move up to tackle on a draw, screen pass or run.

Deep pass defenders receive the following instructions:

1. Always think *pass*. Cue only the passer and drop back into the correct zone.
2. Line up in an alert football position, eyes on the center, hands hanging above the knees, and feet in a com-

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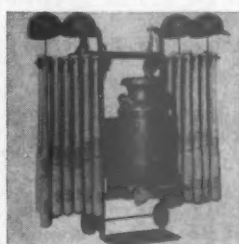
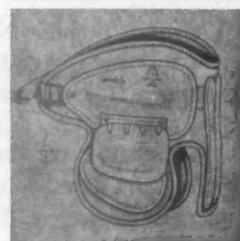
WITH more and more use being made of filmstrips in athletics, this individual viewer will be a welcome addition to the visual aids field. It threads itself automatically as the frame advance knob is turned. The ground glass viewing screen which measures 7" x 9" snaps into place when the luggage type lid is opened. The complete unit measures 4" x 6" x 12", weighs 6 lbs., and is made in two-tone leatherette finish. The lens-mirror optional system distributes a uniformly bright image over all areas of the screen. Viewlex Co., 35-01 Queens Blvd., Long Island City 1, N. Y.

THE newest helmet in the MacGregor line is the "E710." This helmet has geodetic crown suspension padded with "Absorblo" and a heavyweight nylon headband. "Absorblo" padding at the forehead and neck extends up between the suspension and the helmet for greater all-around protection to vital head areas. The "Absorblo" cheek pads snap in, while the snap-on chin strap has a padded chin cup. Entire helmet can be cleaned with soap and water. The MacGregor Co., 4861 Spring Grove Ave., Cincinnati 32, Ohio.



THIS shot put which does not dent ends gym floor damage as well as reduces the danger to contestants or spectators. The molded rubber casing flattens out momentarily and disperses the shock over 60 square inches. Loosely packed lead pellets dissipate the counter-shock, while the air trapped in the core gives to the compression. It re-expands instantly to snap the casing back to a firm, true sphere shape. The shot put is the regulation 12 pounds in weight and 5½ inches in diameter. Aerco, Inc., 1215 N. 11th St., Milwaukee, Wisc.

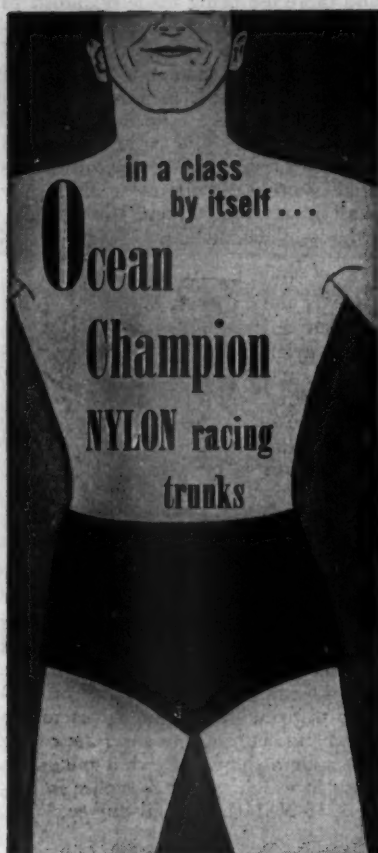
THE new "Crusade" hip pads have incorporated "Armor-Lite" in place of the traditional fiber. This plastic material is impervious to moisture, stronger than fiber, and flexible enough to provide increased shock absorption and better body fit. In addition, the material is unaffected by extremes of heat and cold and thus will not soften or become brittle. The pads are available either without or in combination with "Cushok Vinyl." Rawlings Sporting Goods Co., 2300 Delmar Blvd., St. Louis 3, Mo.



A very handy item for the baseball coach is this "Gravco Baseball Valet Cart." It contains a water cooler, places for 24 bats, batting helmets, catcher's equipment, extra balls, and a first aid kit. Rubber-tired wheels make it easy to transport equipment from the gym to the field as well as serving as a means of keeping all the equipment up off the ground during practice or games. Folds and can be carried in a car trunk. Gravco Corp., 5420 Queens Ave., St. Louis 15, Mo.

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8. When a pass is intercepted, always cut for the nearest sideline.

9. When the defensive team intercepts, always peel block the potential receiver.

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☐ Information "Skill Trainers Target" and batting tee
☐ Information "E710" helmet
☐ Information "Breathe Life Trainer"
☐ Information "Crusade" hip pads
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 Rawlings Sporting Goods Co., 69,
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☐ "Better Athletes Through Weight Training," Bob Hoffman, \$5.00
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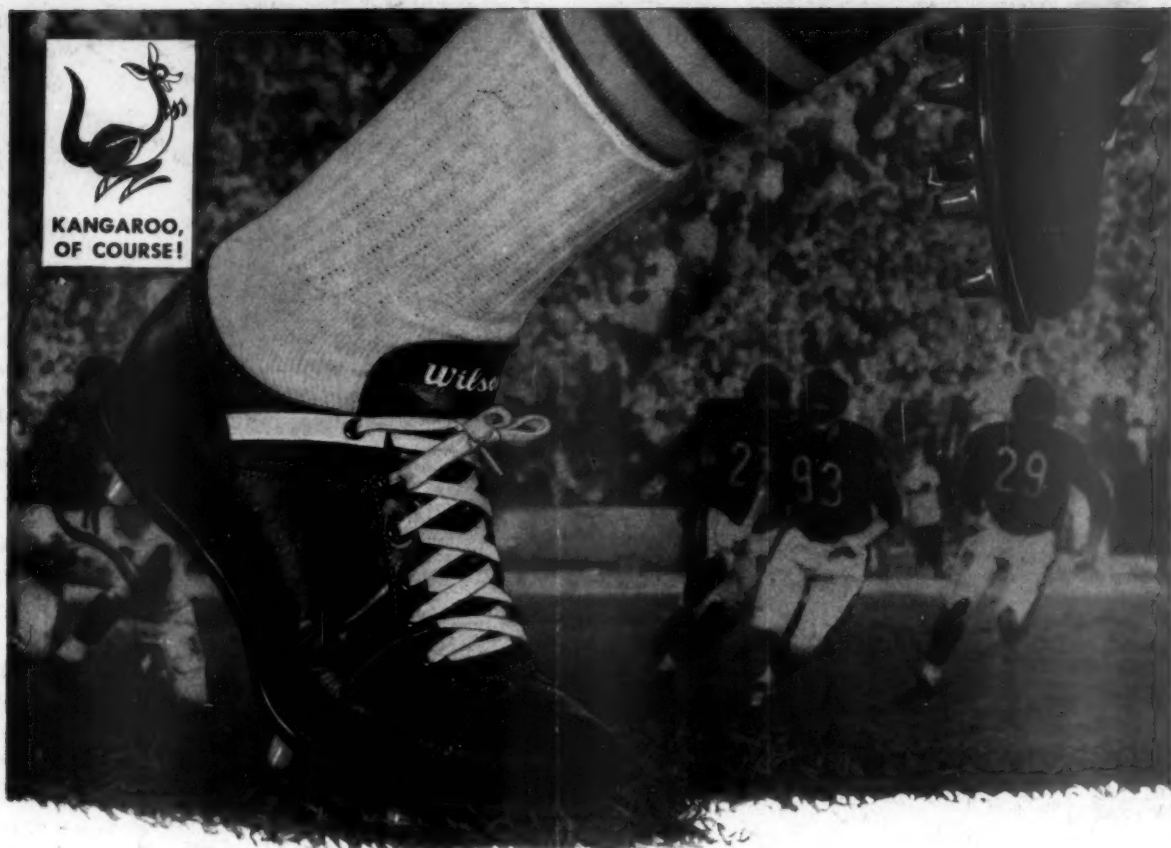
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